SERIE
The Renewal of Primary Health Care in the Americas

No. 2

Medical Education for Primary Health Care

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Health Systems and Services Area
Human Resources for Health Development

PAHO HQ Library Cataloging-in-Publication

Pan American Health Organization

"Medical Education for Primary Health Care" (Series: The Renewal of Primary Health Care in the Americas No. 2). Washington, D.C.: PAHO, © 2009. 73 p.

ISBN: 978-92-75-12938-8 (in press)

ISBN: 978-92-75-13039-1 (electronic)

I. Title

1. PRIMARY HEALTH CARE – manpower
2. MEDICAL EDUCATION – standards
3. REGIONAL HEALTH PLANNING
4. HEALTH SYSTEMS – organization & administration
5. COMMUNITY MEDICINE – education
6. COMMUNITY HEALTH SERVICES
7. AMERICAS

NLM W84.6 DA1

Design and Layout: Matilde E. Molina and María Laura Reos

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1. Introduction

1.1. Why A Renewal Of Primary Health Care, And Why Now?

The aim of this publication is to reinforce the efforts of Member States and medical schools as they seek joint approaches to strengthen the ability of future physicians to better understand their role in responding to the growing needs of the population and contributing to the development of health systems based on primary health care.

The initiative for renewal of primary health care has been prompted in large part by the realities of social exclusion from health care that continue to persist in many countries of the Americas: 230 million people (46% of the population) are without health insurance and 125 million (25%) are without regular access to basic health services—120 million for economic reasons and 107 million for geographic reasons. As a result, 17% of births are not attended by skilled health personnel, 680,000 children have not completed their DPT3 vaccination series, and 152 million live without access to drinking water and basic sanitation.[1]

It is this situation that motivated the Ministers of Health of the Americas to formulate and approve the Health Agenda for the Americas,[2] which commits all the countries of the Region to work together to meet the health needs of the population in the coming decade and restore the principles and values of human rights, universal access and inclusion, equity in health, and social participation.

The Health Agenda sets forth ten action-based approaches that will be essential to overcome the situation described. These include strengthening

1 Panorama de la exclusión de la protección social en salud en América Latina y el Caribe. Document emanating from ILO/PAHO Latin American and Caribbean Regional Tripartite Meeting on the Extension of Health Care to Excluded Groups, Mexico City, 1999.

2 PAHO/WHO. Health Agenda for the Americas 2008-2017. Washington, D.C.: PAHO; 2007.

the national health authority; tackling the social determinants of health; harnessing knowledge, science, and technology; strengthening solidarity and health security; diminishing inequities; reducing the risk and burden of disease; increasing social protection and access to quality health services; and strengthening the management and development of health personnel.

Inherent in this general framework are two key strategies: implementing the renewal of primary health care (PHC), and meeting the challenges and goals for the development of human resources for health.

Based on the challenges posed by the *Health Agenda* and its two key strategies, the PAHO Health Systems and Services Area has presented a Proposal for Human Resources for Health Development that envisions a joint undertaking with the countries of the Region to redefine medical education. The proposal presents a community-based education program with a general medicine orientation and content in both public health and family and community health. Relying essentially on a primary health care approach, it seeks to give medical graduates solid technical and social competencies, an interdisciplinary attitude, and ethical standards of conduct.

This document lays the groundwork for discussions aimed at finding shared pathways to address this task. To overcome the realities described earlier, it will be necessary to set objectives and ask questions along the way to ensure that medical education is in alignment with other policies.

It is intended to accomplish the following specific steps:

- Conduct an in-depth analysis of the current situation of medical education based on countries' reflections on the subject.
- Discuss and share experiences regarding best practices based on progress, accomplishments, and difficulties encountered in attempts to introduce PHC-based medical education.
- Generate a network for sharing experiences among the countries that will help to support the processes of change.
- Establish working strategies and prepare documents that will help the countries find appropriate pathways for change.

1.2. The Starting Point: Renewal Of Primary Health Care

Primary health care was defined 30 years ago by the World Health Organization (WHO) as "essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination."[3]

The world has changed a lot since then, but major inequities continue to exist. Also, weaknesses and inconsistencies have emerged in some aspects of PHC. For these reasons, primary health care needs to be reinterpreted in light of the lessons of the last three decades. Analysis of the determinants of health and their effect on human development, supported by the results of a study on the changes needed in the existing health systems, has led to the conclusion that primary health care remains the principal and most effective strategy for promoting health and reaching the highest possible level of health for every human being.

Recognizing that PHC is a tool that strengthens society's ability to reduce inequities in health, in September 2003 the 44th Directing Council of PAHO/WHO approved Resolution CD44.R6,[4] in which it addressed a series of requests to the Member States aimed at strengthening PHC. The resolution also called upon the Director of PAHO/WHO to take the principles of PHC into account in the activities of all technical cooperation programs, especially those related to attainment of the Millennium Development Goals; evaluate PHC-based systems and identify and disseminate information on best practices; encourage the countries to improve training for health personnel, emphasize support for locally defined primary health care models, and celebrate activities underscoring the importance of 25 years of experience since Alma-Ata; and organize a regional consultation to define future PHC-based strategic and programmatic orientations.

Both PAHO/WHO and WHO recognize that the values that lay behind the goal of health for all and the PHC strategy 30 years ago are still valid

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3 WHO. Declaration of Alma-Ata. International Conference on Primary Health Care. Alma-Ata, USSR, 6-12 September 1978.

4 PAHO/WHO. Resolution CD44.R6 of the 44th Directing Council. Washington, D.C.; 2003.

today. They also acknowledge that many of the problems that led to development of the PHC strategy continue to persist,[5] and they understand that the countries still regard PHC as one of the cornerstones of their health policies.[6]

The position paper "The Renewal of Primary Health Care in the Americas" states that the purpose of the renewal is to revitalize the capacity of all countries to organize a coordinated, effective, and sustainable strategy that will make it possible to solve existing health problems, face new health challenges, and improve equity. The ultimate goal of an effort of this magnitude is to achieve sustainable health gains for the entire population.[7]

It is proposed that PHC renewal be incorporated as an integral part of health system development—"health system" being understood to refer to the set of essential structural and functional elements that guarantee coverage and universal access to services so that the services can be in a position to promote equity. The systems should provide comprehensive, integrated, and appropriate care across time, with emphasis on prevention and promotion and guaranteeing the user's first contact with the system, with families and communities as the basis for planning and action.

The values, principles, and essential elements of a PHC-based health system can be seen in the following figure.

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5 Pan American Health Organization. Health in the Americas (vols. 1 and 2). Washington, D.C.: PAHO; 2002.

6 WHO. World Health Assembly, 2003.

7 PAHO/WHO. The renewal of primary health care in the Americas. Position paper of the Pan American Health Organization/World Health Organization (PAHO/WHO). Washington, DC; 2007.

Figure 1

Among the essential elements of a PHC-based health system are **human resources**. Health personnel should have not only adequate knowledge and skills but also ethical standards and the capacity to treat people with dignity and respect. PHC renewal requires countries to create the necessary conditions for a human resources development process that emphasizes quality and ongoing improvement, development of appropriate PHC competencies, multidisciplinary teams, and promotion of research.

Human resources are the essential component of health systems, yet health personnel are not adequately trained to work in PCH-based contexts. The complex human resources issues involved should be addressed through long-term, sustainable, and comprehensive policies that are guided not only by the commitment to rectify long-standing imbalances between education and services but also by the need to address the challenges of migration,

unemployment/multiple job-holding, the civil service career ladder, and preparing workers so that they will be competitive.[8]

By way of response, it is proposed to define the competencies of health teams[9] to guide the countries in developing health personnel that PCH-based health systems require, bearing in mind that:

- Universal coverage will require a large number of professionals trained in primary care.
- Human resources should be planned based on the needs of the population.
- Human resources training should be geared to meeting health needs, and it should be provided on an ongoing basis.
- There should be descriptions of the human resource skills needed in the corresponding profile and a list of skills so that workers can make the necessary adjustments to carry out specific tasks.
- Policies and mechanisms should be developed that will ensure adequate working conditions for health personnel as well as their improved performance.

1.3. Challenges And Goals For The Development Of Human Resources For Health

Along with fostering the PHC renewal initiative, the PAHO Health Systems and Services Area, through its human resources projects, has generated a process of discussion and consensus-building around the major challenges[10] faced by the countries of the Americas in order to have the human resources they need—a process embodied in the regional Toronto Call to

8 Mirta Roses. Closing remarks at Buenos Aires 30/15 Conference: From Alma-Ata to the Millennium Declaration (Buenos Aires, August 2007). Hacia un cuidado integral de la salud para la equidad.

9 OPS/OMS. Sistemas de Salud basados en la Atención Primaria de Salud. Enfoque de Competencias: Estrategias para el desarrollo de los equipos de APS. Unidad de Servicios de Salud. Washington, DC; 2006.

10 OPS/OMS. Consulta Regional de Recursos Humanos en el Sector de la Salud: Retos fundamentales: http://observatoriorh.org.

Action,[11] under which the countries commit to formulating 10-year action plans that will:

- Define policies and plans aimed at adapting health personnel to changes in the health systems, and develop the institutional capacity to implement said policies and review them periodically.
- Place the right people in the right places to achieve an equitable distribution of health personnel in different regions based on the specific health needs of the respective populations.
- Regulate the movement and migration of health personnel in order to guarantee health care for the entire population.
- Generate a labor relationship between the workers and the health organizations that will promote healthy working environments and foster commitment to the institutional mission to guarantee quality health services to all the population.
- Develop cooperation mechanisms between training institutions and health institutions so that it will be possible to adapt the education of health professionals to a universal and equitable model for the provision of quality care to meet the health needs of the entire population.

Within this framework of major challenges and progress by the countries in constructing their 10-year plans,[12] the Member States made a commitment at the Pan American Sanitary Conference in 2007[13] to work toward achieving 20 goals for human resources for health in 2007-2015.

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11 Toronto Call for Action: Regional Strategy for the Decade of Human Resources in Health. Seventh Regional Meeting of the Observatory of Human Resources in Health (Toronto, October 2005). Toronto: PAHO, Health Canada, and Province of Ontario Ministry of Health, and Long Term Care; 2005.

12 Planes decenales de recursos humanos en salud: hacia una visión común. VIII Reunión Regional de los Observatorios de Recursos Humanos para la Salud, OPS y el Ministerio de Salud de Perú, Lima; noviembre de 2006.

13 PAHO/WHO. Regional goals for human resources for health 2007-2015 (CSP27/10) 27th Pan American Sanitary Conference; 59th session of the Regional Committee. Washington, DC; 2007.

With regard to the fifth challenge—i.e., the education of health professionals—the following goals were proposed:

Goal 17: 80% of the clinical health science schools will have reoriented their education toward primary health care and community health needs and incorporated strategies for interprofessional education.

Goal 18: 80% of the clinical health science schools will have adopted specific programs for attracting and educating students from underserved populations, with special emphasis, when appropriate, on indigenous populations or First Nation communities.

Goal 19: Attrition rates in schools of nursing and medicine will not exceed 20%.

Goal 20: 70% of schools of public health and clinical health sciences will be accredited by a recognized body.

These goals are in part a reflection of the fundamental problems that countries of the Region are facing in medical education—for example: lack of social commitment to provide health care to the entire population observed in many schools; high cost of health care reflected in the high proportion of specialized physicians versus family health and general practitioners; medical graduates' limited PHC skills and knowledge about its management; excessive focus on the biological model; concentration on hospital-centered internships and residencies; and lack of emphasis on health promotion and disease prevention at the individual, family, and community level, or any integrated training that incorporates the technical and humanist perspectives throughout the different stages of the medical curriculum.

The goals approved by the Pan American Sanitary Conference entail a social commitment on the part of both educational institutions and the health services, as well as a systematic and resolute effort to embark on a process of change that will overcome the problems described. Each country will have to shoulder its share of the burden by setting public policies and developing leadership in the health and education sectors as they jointly set forth on a common path leading to:

- Introduction of policies that will attract students to PHC.
- Establishment of policies that will encourage the retention of professionals well-trained in PHC in strategic locations.

- Adoption of policies that will ensure the sustainability and retention of human resources (teachers, local government personnel, and students) focused on the practice of PHC.
- Implementation of mechanisms that will make it possible to guarantee the required levels of proficiency in PHC.
- Definition of agreements and follow-up mechanisms at the level of the ministries of health to oversee these change processes.

1.4. Differing Views Of The Primary Health Care Model In Medical Education

Based on a review of the literature and experiences in the countries, below is a summary of what has been learned in over 30 years about incorporating PHC into the undergraduate curriculum.

The contributions of Juan César García and Jorge Andrade[14,15] during the decades leading up to the declaration of Alma-Ata give us a perspective on medical education in Latin America as well as what was being said and debated about the concept. These authors emphasized the importance of the social sciences in understanding health and disease and in clarifying the psycho-sociocultural factors that bear on the production and spread of disease in the population.

The PAHO Human Resources Program took on the task of defining the physician that each country needs and reorienting education to serve the community, especially by developing increased understanding of the social and economic determinants that influence education and professional practice.[16]

A proposal aimed at accelerating community-focused medical education that took on importance in the Americas starting in 1976 was "teaching-service integration." The idea was to combine these processes as an

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14 García JC. Paradigmas para la enseñanza de las ciencias sociales en las escuelas de medicina. En: García JC, OPS/OMS. Pensamiento social en salud en América Latina. Washington, DC: Interamericana SA; 1994.

15 Andrade J. Marco conceptual de la educación médica en América Latina. Washington: OPS/OMS, Serie Desarrollo de Recursos Humanos No. 28, 1979.

16 Ferreira JR. Written interview conducted in 2007.

educational strategy in an effort to gradually bring education, service, and research closer together, especially at the local level.

This concept implies a process of gradually increased coordination between educational institutions and the health services with a view to improving health care, guiding the production of knowledge, and preparing the needed personnel based on the epidemiological profile of a given population and the regional context. It is designed to ensure the continuity of the educational process (including the continuing education process) as it evolves in the context of actual service, as well as the capacity to adapt it.[17]

At first, the fundamental purpose of this strategy was to bring education more closely in line with actual practice to improve the health of the population, enhance the teaching-learning process, ensure that current practice was adequate to meet the real needs of the population, and actively and consciously enlist community participation to address the causes that give rise to health problems. The idea was later extended to include the criterion "early and balanced participation of the student at all levels of care in a health region, especially in primary health care activities."[18]

Based on this criterion, projects were developed and technical cooperation was provided to schools to guide them in searching for an epidemiological and demographic basis for curriculum and structural planning. The countries considered "integration" to include all levels of care, from the first to the highest, as well as preventive, promotional, and curative actions and rehabilitation.

One of the main conclusions to be drawn from these experiences is that political will on the part of both the governments and the universities was fundamental for the creation of commissions on teaching-service integration and the development of joint proposals for integration.

As far as educational policy is concerned, a prospective analysis of 80% of the schools in the Region of the Americas conducted by PAHO in 1986-1988[19] identified the main problems shared by these institutions and provided the basis for the statement at the World Summit on Medical Education,

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17 Vidal Layseca C. Apuntes de una vida dedicada a la gente. Lima: SINCO Editores, 2004.

18 Ferreira JR. Misión del hospital a la luz de las nuevas tendencias de la educación médica. Edu. Med. Salud 10 (2):104-151, 1979.

19 Ferreira JR, et al. El análisis prospectivo de la educación médica en América Latina. Edu. Med. Salud 1988; 22(3):242-272.

held in Edinburgh, that it is incumbent upon medical schools to define and adopt a new social contract that legitimizes their raison d'être to society.[20]

Indeed, the Edinburgh Declaration[21] noted as one of its points for action the need to *"formulate policies based on each country's epidemiological and financial situation while at the same time considering the need to raise the status of the primary care physician."*

The Contribution of Medical Schools

The institutions' increased interest in the education of health professionals has become evident in recent decades through their actions—the positions taken, the changes proposed, the search for alternatives, and the experiments undertaken involving a wide range of actors and initiatives with differing outcomes. It is important to review these efforts before thinking about the future.

A number of experiments show that it is possible to strike a balance that prepares professionals in the health sciences and at the same time facilitates development of a PHC model. A recent systematic review found that early experience in the community helped medical students to learn and develop appropriate attitudes toward their studies and future practice while at the same time orienting the medical curriculum toward meeting the needs of society.[22] Published reports from countries as diverse as Sudan and the United States have shown that initiatives linking the university to governments and the community can lead to improved health conditions in the population. This is not a new concept: some of these reports date back more than 20 years.[23] Here are some examples:

- In North America, several experiments have been undertaken in both the United States and Canada. In 1993, the University of Illinois College of Medicine at Rockford introduced its Rural Medical Education (RMED) program aimed at producing primary care physicians for rural areas of Illinois. Students are se-

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20 PAHO/WHO-FEPAFEM. Los cambios de la profesión médica y su influencia sobre la educación. Edinburgh, Scotland: PAHO/WHO; 1993.

21 World Summit on Medical Education. Edinburgh Declaration, 1993.

22 Littlewood S, Ypinazar V, Margolis S, Scherpbie A et al. Early practical experience and the social responsiveness of clinical education: systematic review. BMJ 2005; 331: 387-391.

23 Conner E, Mullan F. (Ed) Community Oriented Primary Care: New Directions for Health Services Delivery Washington DC, National Academy of Sciences, 1983.

lected based on their interest in rural practice. The curriculum is community-oriented, and the program includes a rural preceptorship during which students have hands-on experience in professional practice situations.[24]

- In the early 1980s the University of New Mexico implemented a new, strongly community-oriented program that promoted an integrated curriculum while at the same time maintaining its previous program as an option for students. Studies comparing the two programs ultimately led them to suspend the traditional program.[25]

- The demonstration project known as *Undergraduate Medical Education for the 21st Century (UME-21)* has promoted students' exposure to a curriculum that integrates all disciplines relevant to primary care in the third year of the clinical rotation cycle. Participating institutions have included the medical schools of Dartmouth College, the University of Pittsburgh, and the University of Wisconsin. All the programs place students in close contact with primary care physicians in an effort to learn what effect such a role model can have on students.[26]

- In Canada, the experience of the University of Sherbrooke showed that transition from a traditional to a community-oriented model has been associated with significant improvement in preventive care and greater continuity in care, as well as improvement in the indicators of diagnostic performance. These conclusions were drawn from 4 to 7 years of reports in the provincial health databases.[27]

- In England, the General Medical Council document *"Tomorrow's Doctors"* has served as the basis for developing up-to-date cur-

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24 Stearns HJ, Stearns MA, Glasser M, Londo RA. Illinois RMED: A comprehensive program to improve the supply of rural family physicians. Fam Med, 2000;32(1):17-21).

25 Kaufman A, Mennin S, Waterman R, Duban S, Hansbarger C, Silverblatt H, Obenshain SS, Kantrowitz M, Becker T, Samet J, et al. The New Mexico experiment: educational innovation and institutional change. Acad Med. 1989;64(6):285-94.

26 Pipes CF, Peltier DA, Fall LH Olson AL, Mahoney JF, Skochelak SE, Gjerde CL Collaborating to integrate curriculum in primary care. Medical education: successes and challenges from Three US medical schools. Fam Med 2004;36(January suppl):S126-S132.

27 Tamblyn R, Abrahamowicz MD, Dauphinee MD, Girard N, Bartlett G, Grand'Maison P, Brailovsky C. Effect of a community oriented problem based learning curriculum on quality of primary care delivered by graduates: historical cohort comparison study. BMJ 2005;331;1002.

ricula involving community-based programs and problem-based learning. These models reflect greater concern for the problems of the population and provide epidemiological bases for medical practice. They allow for a more appropriate balance that includes hospital training and also the dynamic integration of community-based PHC within a holistic model of care. Based on these concepts, from the outset the students have close contact with a family/general practitioner and in recent years they have been given responsibility for longitudinal family monitoring in a family medical practice. This educational model responds to the fact that in England the family health services are the portal of entry to the health system.

New Directions in Health Policy

Initiatives in Latin America have included programs undertaken in Cuba and Brazil, where there has been a strong government commitment to develop PHC. The schools are considered the natural source of professionals and therefore curricula are promoted that are consistent with the needs for personnel.

- Cuba's health care model has been based on PHC since the 1960s. Both undergraduate and graduate education have concentrated on the development of a solid PHC-focused professional corps. The profession of family physician was introduced on an experimental basis in 1984. Six years of university studies produce a broad-based general physician—i.e., a basic general practitioner who then goes to work for one or two years. This period is followed by a residency during which the graduate is trained as a specialist in comprehensive general medicine while continuing to be responsible for health care for the population to which he or she has been assigned.[28] In 2003 a significant change was introduced that strengthens the PHC concept and strategy—namely: education was decentralized to work sites, especially polyclinics, where students are received by polyclinic faculty who serve as tutors. The model is based in the concepts of learning-by-doing and virtual education.

28 Jardins Mendes JB, Aneiros-Riba R, Rooms-Perea RS. Cuba: Recursos humanos en la atención primaria de salud y su estrategia de desarrollo. Educ Med Salud; 1993. 27:145-159.

- In 2002, Brazil's Ministries of Health and Education jointly launched PROMED, a program designed to reorient medical education and expose students to a more relevant standard of practice.[29] In the initial round, 20 medical schools volunteered to receive financial support for a pilot study, and of this group, 60% managed to form partnerships with local health services, thereby expanding learning opportunities for students at all levels of health care. In 2005 a new program, *PRO-SAÚDE* [Pro-Health], went on to add the education of nurses and dentists. These programs show how important it is for governments to demonstrate their commitment to the health care model they are promoting. Under this program, the participating schools have to propose a strategy that includes reorientation of the curriculum (with emphasis on the social determinants of health), diversification of the traditional practicum (with priority given to PHC), and active learning. So far, 180 proposals have been presented and work has begun on 93 of them.

In addition, projects undertaken jointly by governments and medical schools with support from the W. K. Kellogg Foundation under "A New Initiative in the Education of Health Professions" (UNI Program) made it possible to carry out experiments starting in 1992 as part of the search to integrate educational institutions and services with community support in different countries of the Region. Ultimately the Foundation financed 23 UNI programs in 11 countries with the principal goal of reorienting the education of health professionals toward primary care through changes in the curricula and local health systems while at the same time fostering community participation in health-related issues These programs, carried out in a wide variety of contexts, demonstrated that it is possible to forge partnerships between the community, the educational institutions, and the health services in an effort to develop professionals with a profile geared on the needs of the people.[30]

For Latin America, the UNI Program has restored the belief that it is possible to bring about positive change in the education of health professionals. It has also shown that building partnerships between universities, the health

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29 Campos FE, Ferreira JR, Feuerweker L, Sena RP, Batiste Fields JJ, Cordeiro H, Cordoni Jr. L. Caminhos para aproximar a formação de profissionais de saúde das necessidades de atenção básica. Revista Brasileira de Educação Médica; 2001. 25: 53-59.

30 Almeida M, Feuerwerker L, Level CM. (Ed). La educación de los profesionales de la salud en Latinoamérica. teoría y práctica de un movimiento de cambio. Buenos Aires; 1999.

services, and the community is more than just a strategy for achieving a specific goal: it is a fresh approach to rebuilding relationships between universities and the surrounding community.[31]

New Directions Proposed by Professional Organizations

While these initiatives were getting under way, several institutions came to realize that new directions were needed in the definition of educational profiles. Soon recommendations promoting the training of more PHC-focused physicians began to be incorporated into the formulation of standards and into the documents being produced. The documents all emphasized the need for content going beyond the mere provision of care, to include epidemiology and the social sciences, as well as the introduction of new areas of practice specifically focused on community and family. Examples:

- The standards of the *World Federation for Medical Education (WFME)* and the report of the Task Force on Defining International Standards in Basic Medical Education both point to the need for medical schools to guarantee a sufficient number of patients and facilities for clinical training in hospitals, including outpatient services, dispensaries, primary care stations, public health care centers, and other community areas for the student population."[32]

- The *Institute for International Medical Education (IIME)*, in its proposed list of minimum essential requirements, specifies the professional knowledge, attitudes, and skills that students should have by the time they graduate and places special emphasis on the domain of public health and health systems.[33]

- The *Network Towards Unity for Health*[34] has presented a position paper outlining the desired attributes of PHC-oriented academic and health care institutions, which can be summarized as follows:

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31 Tancredi FB. Foreword. In: Almeida M, Feuerwerker L, Level CM. (Ed). La educación de los profesionales de la salud en Latinoamérica. teoría y práctica de un movimiento de cambio. Buenos Aires; 1999.

32 WFME Task Force on Defining International Standards in Basic Medical Education. Med Edu; 2000; 34: 665-675.

33 Institute for International Medical Education. Global minimum essential requirements. http://www.iime.org/gmer.htm. Accessed 15 May 2008.

34 Kaufman A (Ed). Position Paper: Primary Care. http://www.the-&networktufh.org/publications & resources/positioncontent. &asp? id=5&t=Position+Papers. Accessed 15 May 2008

- The undergraduate curriculum and the number of positions available for graduate education should strike a balance between primary care and specialization that reflects local, regional, and national needs.
- A substantial portion of the students' training experience should be devoted to a preceptorship in which primary care professionals serve as role models.
- Research on primary care should be a vital component of the institution's effort.
- Students should be exposed to interdisciplinary models of primary health care, research, and education.

Institutional voices in the Region of the Americas have begun to point out the need to reorient the curriculum. Although the process is still in its early stages, below are some examples that deserve to be mentioned:

- A proposal to reform the medical education curriculum, presented by the Colombian Academy of Medicine at the XVI Meeting of the Latin American Association of National Academies of Medicine (ALANAM) in 2006, points out the need to expand the curriculum to include subject matter related to the social sciences, management, and administration. It also calls for compulsory study of a second language and the promotion of knowledge about the country's sociopolitical and legislative situation. This proposal makes it clear that integration is the necessary starting point for any interdisciplinary or interprofessional practice, which is key to the implementation of PHC models. By explicitly indicating the need to incorporate social science as well as knowledge about local realities into the curriculum, it is taking a step toward revising the standard for professional competency and thus expanding the view of reality that these medical graduates should have.
- The *ALFA Tuning Latin America Project*, based on a model developed by the European Union, brought 181 Latin American universities together to draft a list of key competencies required of graduates in several professional careers. This undertaking raised some points that may be considered central to a PHC-oriented program. The heading "ability to work effectively within

the health systems" includes "ability to participate actively and effectively on the health team and in the community" (competency 58).[35]

- The *6x4 UELAT Project*, as defined in its documents,[36] arose from the need to strengthen cooperation and facilitate mobility between higher education systems in Latin America in order to promote their transformation. It ties in with the main objective set forth in the Declaration of the First European Union, Latin American, and Caribbean Ministerial Conference on Higher Education (UELAT) (Paris, November 2000), which is to build common opportunity for higher education in the EuroLat countries. The key aspects of the project, which is based on a four-pronged analysis, are: working on an approach to evaluation, recognizing the results of competency-based learning, and strengthening the relevance of ties between higher education and research, on the one hand, and society, on the other, within the larger framework of collaboration between countries and regions. In the chapter devoted to medical education (one of the six areas examined), competencies clearly linked to PHC (health promotion and disease prevention) are emphasized. The document explicitly offers an approach to evaluation that stresses the demonstration of knowledge and abilities.

Other institutions—e.g., the World Organization of Family Doctors (WONCA) in collaboration with Global Health through Education, Training, and Service (GHETS), The Network: Towards Unity for Health (TUFH), and the European Forum for Primary Care (EFPC)—working in alignment with the PAHO/WHO strategies, have issued the call for "Fifteen by 2015." This initiative urges lending institutions such as the World Bank and the Global Fund to ensure that 15% of budgets for vertical programs aimed at fighting disease be invested in the strengthening of integrated, well-coordinated local health systems, and that this percentage be increased over time.[37]

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35 Informe Final del Proyecto Tuning América Latina: Reflexiones y perspectivas de la Educación Superior en América Latina. Bilbao España Imprenta Universidad de Deusto, 2007.

36 Proyecto 6x4 UEALC. Resumen ejecutivo 2004-2007. http://www.6x4uealc.org/site2008/.

37 Strengthening primary care: addressing the disparity between vertical and horizontal investment. British Journal of General Practice: 2008:4.

2. Experience With Primary Health Care-Focused Medical Education

2.1. Educational Approaches

Several overall strategies have been proposed in the past, as well as combinations of different educational methodologies. Although the initial trend was to add courses aimed at contributing knowledge toward a primary care focus, it was determined that the better approach was not to increase the number of courses and classes but rather to reorient them so that medical students learn how to solve problems and develop the professional competencies needed by society and the PHC-based health system.

The ***community-oriented primary care*** model defined by Sidney Kark and Joseph Abramson in 1982 was subsequently enhanced by adding the attributes of PHC proposed by the Institute of Medicine (namely: accessible, detailed, coordinated, continuous, and accountable), the concept of community focus, and the application of epidemiological methods to the clinical care of individual patients.[38] This proposal, which reflects a history of more than 30 years' experience, is not revolutionary, but it provides a theoretical framework for implementation in different contexts. It is understood that health care means taking responsibility for a specific population. It is based on a process that begins with a diagnosis of the situation, then the identification of priorities, and finally, proposed solutions. Central to the concept is the incorporation of competencies that draw on epidemiology and the behavioral sciences. There have been many experiences with community-

38 Community oriented primary care: new directions for health services delivery. Washington DC, Institute of Medicine; 1983.

focused educational models, including those categorized by Magzoub et al.[39] based on 31 operational programs. A community-based education program is one that is conducted in the community setting throughout the curriculum. It may be primarily aimed at providing care for specific population groups, carrying out community-oriented research, or simply training students. This classification provides the basis for analyzing the predominant activities during the course.

The introduction of ***family medicine*** as a PHC strategy has been promoted at several medical schools working jointly with family medicine associations. This modality has a long history, though mainly at the graduate level. A study conducted in 2000 identifies some of the difficulties involved in introducing family medicine in the medical schools.

In November 1994, a joint WHO/WONCA conference was held in London (Ontario), Canada, which produced a working paper entitled "Making Medical Practice and Medical Education More Relevant to People's Needs: The Contribution of the Family Doctor," with 21 recommendations that implied major changes in health systems. The recommendations ranged from the financing and allocation of resources to training and medical education. Building on this progress, the WONCA-CIMF Regional Congress of Leaders and Experts of the Americas: "Family Medicine in Health Services Reform" was held in Buenos Aires in 1996. This conference produced the Buenos Aires Declaration,[40] which points out that the teaching of family medicine should be adapted to the needs for services and that universities should play a more active and responsible role in the development of family medicine-related resources in undergraduate and graduate-level courses.

In 2002, participants in the First Ibero-American Summit on Family Medicine, held in Seville, Spain, pointed out that considerable efforts will be needed to bring medical schools in the Ibero-American countries up to pace in incorporating family medicine into the undergraduate curriculum. The strategies adopted should be appropriate to each country's situation and at the same time, take into account the following conditions that are shared by all:[41]

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39 Magzoub ME, Schmidt A. Taxonomy of community-based medical education. Acad. Med. 2000;75:699–707.

40 La medicina familiar en la reforma de los servicios de salud" (CIMF/OPS/WONCA, Buenos Aires, 1996). http:/www.fundacionaequus.com.ar/biblioteca/declaracion-of-good-aires.pdf. Accessed 14 May 2008.

41 Comprometidos con la salud de la población. Rev Cubana Educ Med Super; 2003;17(1):67-72.

- Strategic partnerships are needed in order to accelerate the incorporation of family medicine and primary care into theoretical and practical classes in the undergraduate curricula of medical schools in the Ibero-American countries.

- The necessary will must be mobilized and resources guaranteed in each country to conduct innovative curriculum experiments in teaching family medicine and primary health care at the undergraduate level, including clear and early coordination with the health services.

- It will be essential to develop teachers and educational leaders in family medicine in order to meet the proposed objectives. A fundamental strategy is to establish programs for international collaboration and exchange in this field.

- It will be necessary to make progress in family medicine and primary health care within the academic structures of the Ibero-American medical schools. Each country must devise national strategies that will make it possible to introduce family medicine into the undergraduate curriculum as a discipline.

- Creation of an Ibero-American Task Force on progress in the development of academic family medicine will be an essential tool for further exploring changes in the orientation, organization, and content of medical school curricula.

- It will be important for this Task Force to have a specific and concrete mandate to implement the recommendations of the document prepared at this Summit, as well as to further explore evolving knowledge about the true situation of family medicine in Ibero-American universities.

Finally, the Commonwealth Fund[42] has recently proposed the Patient-Centered Primary Care Initiative, which is in alignment with the recommendations of the Institute of Medicine on readdressing quality in medical education. This initiative seeks to promote the type of health care that patients need, when they need it, and in the manner they want it. It focuses on evidence-based health care, but subject to the values of patients. This model seeks to retain traditional physician-oriented medical education based on

42 Commonwealth Fund. Patient-Centered Primary Care Initiative. http://www.commonwealthfund.org.

paternalistic principles but redirect it toward meeting the needs and expectations of patients and the community being served.

There have been no studies so far that show which approach yields the best results. Any analysis of this question should start from the premise that in order to meet the proposed goals it is necessary to have a physician who not only has the skills to practice at the first level of medical care but also sees PHC as a comprehensive idea that includes action in the community and that requires an interdisciplinary and interprofessional approach, and hence an integrated working team. The big question is how to translate these intentions into effective actions in our environment.

2.2. Choosing A Primary Care-Oriented Program

In addition to looking at the characteristics of a program for educating students, another aspect is the influence of medical schools on the student's choice of a primary care-oriented program. When considering a strategy to promote PHC-oriented human resources development, it is not possible to separate this initiative from the many influences that can affect the students' choices; students still feel that there is a certain stigma attached to devoting their career to primary care.[43]

Measures may need to be taken if medical schools want to make the primary care choice more attractive to students. Studies have shown that the strategies with the greatest impact have been: revising the models for the selection of incoming students, increasing the students' exposure to primary care, and having trainers serve as positive role models.

Bland and Meurer[44] reviewed the literature from 1987 to 1993 and found, from the body of 73 high-quality articles, that the students who are more interested in primary care are those who had a broader secondary education, who did not have parents who were doctors, who do not aspire to earn a high income, and who show concern for fellow human beings. This research also revealed that students in these programs liked the longer rota-

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43 Hogg R, Spriggs B, Cook V. Do medical students want a career in general practice? A rich mix of influences! Educ Prim Care; 2008. 19:54-64.

44 Bland CJ, Meurer LN, Maldonado-San G. Determinants of primary care speciality choice; a non-statistical meta-analysis of the literature. Acad Med; 1995. 70: 620-4.

tions in family medicine and the opportunity to follow patients over time. Other positive influences were the culture of the educational institution and the role models presented by educators committed to primary care. The school's mission, vision, and values were also a factor, and this cultural influence was even more noticeable in public institutions.

Other research confirms that students' expectations regarding their future income are a key determinant in their choice of medical career.[45] A compassionate attitude, social values, and subjective perception of people's needs are strong predictors that a student will choose a career in primary care.[46]

Today most methods of selecting students are based on testing their previous knowledge, and they are aimed more at reducing the number of applicants than at selecting suitable candidates for specific programs.[47] However, the evidence shows that models for selecting students should include strategies for identifying characteristics and attitudes consistent with an orientation toward primary care.

During the course of study, the students' contact with educators has several effects: it can be a useful tool for learning future professional behavior and for conveying humanistic attitudes toward patients,[48] but this opportunity is largely overlooked in the planning and analysis of curricula. Some authors hazard to say that lack of attention to the role model provided by educators is the most important area in which significant reform can be achieved in professional education without any real change, where only the curriculum is changed and not the key players—namely, the educators and the students.[49] The role model has been shown to be a major factor in students' decision to choose a PHC-oriented career.[50,51]

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45 Soethout MBM, ten Cate TJ, van der Wal G. Factors associated with the nature timing and stability of the specialty career choices of recently graduated doctors in European countries. Med Educ Online [serial online] 2004;9:24. http://www.med-ed-online.org.

46 Borges NJ, Jones BJ. Medical students' personal qualities and values as correlates of primary care interest Paper prepared for the Annual Meeting of the Association for Medical Education in Europe (Edinburgh, Scotland, Sep 2004 - ERIC Document ED490522.

47 Sigal V. El sistema de admisión a la universidad en la Argentina - 1998. http:/www.iesalc.unesco.org.ve/.

48 Kutob RK, Senf JH, Campos-Outcalt D. The diverse functions of role models across primary care specialties. Fam Med 2006;38(4):244-51.

49 Kenny NP, Mann KV, MacLeod H. Role modeling in physicians' professional formation: reconsidering an essential but untapped educational strategy. Acad Med. 2003;78:1203–1210.

50 Henderson MC, Hunt DK, Williams JW. General internists influence students to choose primary care careers: The power of role modeling. Amer J Med 1996: 101: 648-653.

51 Wright S, Wong A, Newil C. The impact of role models on medical students. JGIM 1997; 12:53-56

3. Consultations With Selected Western Hemisphere Medical Schools: Fundamental Issues

As the starting point for promoting the education of PHC-oriented physicians, a survey was conducted in Latin America through the PAHO/WHO Country Representative Offices to learn about the experiences of universities already using this modality.

Once the schools were identified, a group of them was selected by the countries and invited to complete a questionnaire (Annex I) and, together with the WHO Collaborating Centers on Medical Education

QUESTIONS FOR REFLECTION

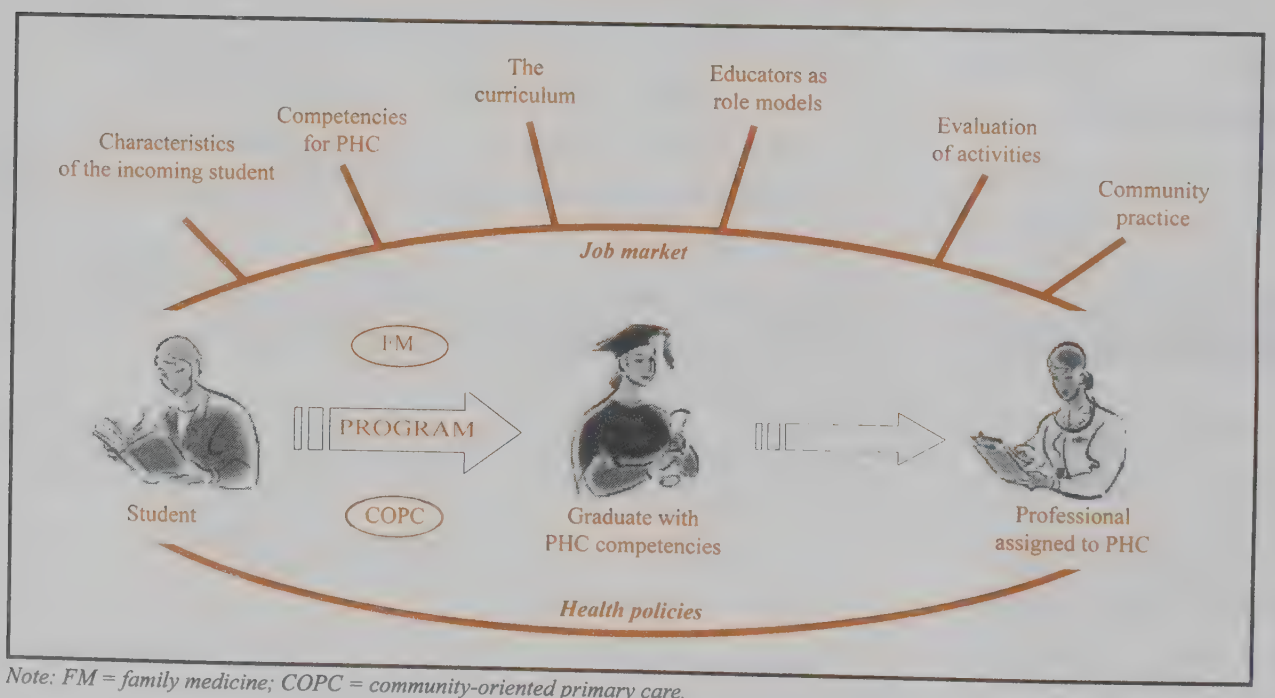
- ✓ What steps should be taken to start forging relationships between educational institutions and the health services so that they can jointly define PHC-oriented education?
- ✓ How can guidelines or a joint policy be developed that will guide academic institutions toward creating a new medical profile?
- ✓ Is it possible to develop a new PHC-oriented curriculum? What are the main theoretical and practical perspectives that need to be taken into account?
- ✓ What initiatives can be taken to start reorienting teachers so that they are in alignment with the new initiatives being carried out?
- ✓ Will it be possible to find practice opportunities outside hospitals and establish agreements with the health services?
- ✓ What selection methods should be considered in order to identify students with more humanistic attitudes?
- ✓ Is it essential to have educators in the PHC field to serve as role models for the students?
- ✓ How can exposure to PHC practice opportunities early in the education process be promoted?
- ✓ What methodologies should be used to encourage active learning, and how should they be used?
- ✓ What are the elements that facilitate debate and change in health institutions?
- ✓ What barriers to change can be expected as a result of promoting an orientation toward PHC?

based in the Americas, participate in a meeting to analyze their experiences, progress made, and difficulties encountered in relation to PHC-oriented medical education. This meeting was held in Belo Horizonte, Brazil on 21-24 July 2008.

Based on the experiences and the evidence gathered from the literature, a series of questions was prepared (see box) for the purpose of provoking thought and, more importantly, encouraging debate.

During the meeting a number of experts from the medical schools and collaborating centers gave presentations and panels were held on key issues related to the problem with a view to generating future strategies. One of the panels considered whether undergraduate education was having success in guiding their trained professionals toward primary care, and whether these graduates were being incorporated into the PHC work force during their productive professional stage. For this purpose, the following factors were considered relevant: ***selection process, the curriculum, the activities included in the program, the education of trainers and their performance as role models, the amount and quality of community practice, and relationship to the services and health policies*** (Figure 2).

Figure 2. Analysis Framework



Note: FM = family medicine; COPC = community-oriented primary care.

3.1. Summary Of Questionnaires Received

Questionnaires were received from the following universities:

- Havana Advanced Institute of Medical Sciences (Cuba)
- Madre y Maestra Pontifical Catholic University (Dominican Republic)
- Metropolitan Autonomous University-Xochimilco (Mexico)
- Tomás Frías Autonomous University (Bolivia)
- University of Cuenca (Ecuador)
- University of the Eastern Republic of Uruguay (Uruguay)
- University of La Sabana (Colombia)
- National Autonomous University of Nicaragua-León (UNITE-León) (Nicaragua)
- San Antonio Abad del Cusco National University (Peru)
- National University of Tucumán (Argentina)
- National University of the South (Argentina)
- University of Sherbrooke (Canada)
- University of New Mexico Health Sciences Center (United States of America)

The first observation noted was that, at the time these institutions for training physicians were created, they were all referred to as the "College/School/Department of Medicine." The word "health" was not included in their names.

Below are summaries of the points that were considered most relevant, given the descriptive nature of the information requested.

The Curricula

Whether explicitly stated or not, all the profiles of graduates submitted by the universities indicated that they intended to train as general practi-

tioners with abilities applicable to primary care, mainly with emphasis on community work, health promotion and/or disease prevention at both the collective and individual level, or evidence-based care.

In North America, the curriculum takes four years to complete, whereas the average in Latin America is six and a half years.

The curricula reflect a strong trend toward abandoning the discipline-based models. They tend to be organized in an integrated manner, often using a spiral-type integration. In addition, most of them provide a clinical cycle with extended rotations in outpatient rural settings or family medicine practices.

With regard to the educational methodology used, although the proportions of the different types of activities vary from one university to the next, there is a clear tendency to abandon the class-based model in favor of small working groups and to give priority to time for independent study—in other words, there is evidence of a shift toward a student-centered model.

Relationship with the Health Services

The universities reported that there is a trend for governments to include PHC in their health policy agendas as a fundamental organizational strategy for the new health systems. The scope of this phenomenon varies greatly, from the adoption of policies and criteria for the development of a universal PHC-based health system to the preparation of proposals to promote PHC through specific programs.

With regard to the governments' relationships with the medical schools, a number of different models were seen, ranging from complete coordination between the health services and the medical schools to a system of affiliation that allows students to have practice opportunities under various types of agreements. In some cases, other institutions (community organizations, unions, municipal governments, health personnel, schools) have been included in these agreements in a move toward intersectoral collaboration. The participation of health-related nongovernmental organizations has also been considered by some of the institutions.

The Students

Major differences were observed between the Latin American schools and those in North America in terms of the number of students and academ-

FACILITATING FACTORS	LIMITING FACTORS	NEEDS
□ Government health system policy focused on PHC □ University authorities committed to the change □ Support from international organizations □ Curriculum integration □ Curricula that provide for direct teaching of general practitioners □ Multiple examples of educational scenarios □ Demonstration of positive impact on health, based on the PHC strategy □ Implementation of residences in family medicine	□ Lack of government policies for placing professionals trained in PHC □ Insufficient financing available to implement the change □ Limited motivation on the part of educators □ Educators' lack of knowledge about PHC-based health strategies □ Tradition of hospital-based education □ Insufficient teaching experience of professionals working in PHC □ Poor quality of providers at the first level of care □ Negative image of general medicine in the population □ Resistance of academic peers to evaluate decentralized models □ Strong influence of private medicine, specialties, and fragmentation of the career into different areas □ Individualistic nature of the student body	□ Promotion of government PHC policies □ Articulation and coordination between the schools and government policies in the area of health and health programs □ Training in medical education for professionals in PHC services who become involved in teaching the students □ Increased material and human resources in PHC □ Opening of the university to the community □ Encouragement of early student contact with community practice □ Systematic evaluation of results □ Development of PHC-oriented research □ Greater visibility of successful experiences of PHC-oriented schools

ic dropout rates. The schools in the north tend to have fewer students and a higher proportion of graduates. In Latin America, on the other hand, except for Argentina's National University of the South and San Antonio Abad del Cuzco National University in Peru, the student bodies range from 800 to 6000 and more. In most of the Latin American universities the dropout rates are high—between 20% and 60%.

The selection methodologies are highly diverse. The following were noted:

- Grade-point average for previous education.
- Interview.
- Tests for biological knowledge (majority).
- Assessment of cognitive abilities.
- Evaluation of predictive characteristics indicating likelihood to adapt to the curriculum modality or demonstrated preference for PHC.

The Faculty

The teacher-student relationship varies greatly from one school to the next.

The distribution by subject area shows, in some cases, a limited number of teachers in the social areas and the highest concentrations in clinical areas and the specialties.

Two models emerged for the training of teachers in aspects related to education:

- At the graduate level, master's or more advanced graduate degrees in education (the majority).
- Training focused on abilities to work in individual groups and teacher-student interaction in small groups.

Evaluation

Half the schools do evaluations at the time of graduation to assess the competencies acquired by the students; the rest continue to prioritize the evaluation of content. Few countries have instituted accreditation procedures and processes at the national level that involve self-evaluation, monitoring of standards, or external or peer evaluation.

Evaluations of competencies and content do not clearly reveal PHC abilities; in general, these are usually evaluated as part of clinical abilities.

It is possible, however, to detect a clear intent to evaluate higher-level processes and competencies that go beyond the traditional evaluation of knowledge: there are several examples of evaluation related to training and abilities. Efforts have been made to introduce formative evaluation and the use of multiple evaluation instruments.

Educational Methodologies Used

The methodologies vary considerably; usually different combinations of the following are found:

- Classroom teaching.
- Tutorials in small groups.
- Research projects.
- Project-based learning.
- Ability training.
- Field work.
- Case studies.
- Journal clubs.
- Learning directly from patients.

It should be noted that several of the responding universities described introduction of the problem-based learning methodology to varying degrees and gave examples of curricula organized completely on the basis of this methodology.

Activities for Development of PHC-related Abilities

Both practical activities and community exposure with precise indicators for the PHC strategy are gradually being introduced, to a lesser extent in the first few years but fully by the end of the program.

As a way of increasing the effectiveness of experiences with PHC practice, consideration is being given to longer rotations in PHC or family medicine services during the clinical cycle or the internship.

The universities that use problem-based learning cite the inclusion of PHC-related content in the formulation of problems.

Mechanisms that Facilitate or Limit the Development of PHC-focused Curricula

The questionnaire asked the respondents to cite any mechanisms that facilitate or limit the process of reorienting undergraduate education toward PHC, as well as any current needs that these schools might have to develop them. A summary of the responses is given below:

3.2. Central Issues Addressed In The Presentations

The program of the three-day meeting was largely devoted to thematic panels with invited speakers from the universities presenting their experiences in the particular area being explored. The panel topics were:

- Profile and Competencies of the PHC-Oriented Physician.
- Relationship between Universities/Schools and Government/ Health Services.
- Curriculum Development, Aspects Relating to Renewal of PHC, and Practice Opportunities Outside Hospitals.
- Training the trainers to help make the PHC vision a reality.
- Selection of students, prior characteristics, and incorporating them into the workforce.
- Role of the PAHO/WHO Collaborating Centers and collaboration among the countries of Latin America.

Each panel was followed by a discussion on what had been presented and the topic in general. Broadly speaking, the presentations and discussions came down to the following basic issues:

- Government involvement.
- Curriculum development.

- New learning scenarios.
- Need to evaluate experiences.
- PHC-oriented teacher training.
- Selection of students in alignment with the need for professionals.

Government Involvement

The panelists were clear that there needs to be a relationship between medical education and the health services, especially the public services. It is evident that the two will become more closely aligned if and when governments adopt a unified vision of their health systems and take on leadership along with the schools in this estimation process. It should be understood that health is a political construct that goes beyond the curative function. It needs to be analyzed from a broader perspective that takes into account the determinants of the population's health. Health outcomes are influenced only partially by actions taken in the health sector and by the training of professionals.

If governments make a firm commitment to reorient their health systems to be more PHC-based, as Cuba and Brazil have done, this shift in policy will trigger the need to change curricula for the training of health professionals.

The processes of change move faster when needs are stated clearly and when there is community participation and strong government leadership. Clearly stated health needs are what will determine the profile and number of professionals required.

Universities can invest huge efforts in transforming their curriculum orientation, but unless policies are guided in the same direction, these efforts will go largely unrewarded. They can train PHC-oriented professionals, but if the context is unfavorable these resources are likely to get shifted to other specialties or areas of practice and end up being wasted.

On the other hand, universities can play a positive role in helping governments meet their need to expand PHC. They can help support the transformation of professionals to PHC and offer continuing education. They can also provide professionals with research tools so that they can make a contribution to knowledge in their area of practice. They can contribute know-how and management of unconventional educational media. In order

to do all this, however, their mission must include serving their surrounding community, and this may represent a change in the university's vision. In other words, the university-government relationship should be a two-way proposition.

Curriculum Development

The participants cited the changes that have taken place in curriculum development in recent years, prompted by the need to adapt the profile of the prospective graduate to social reality. The new curricula being proposed are competency-based, as opposed to the traditional design guided by knowledge content.

In this vein, there has been progress in incorporating content that was not typically included in past curricula but is needed in order to prepare a PHC-oriented professional. Examples are the inclusion of the epidemiological and social bases of health determinants, public health tools, and bioethics.

This content has been incorporated in a number of ways. In many cases the process led to a global rethinking of the curriculum and the search for comprehensive models as well as the breakdown of boundaries between disciplines. Other cases involved simply adding new courses or modifying existing ones. There has also been a trend to look for PHC issues that cut across the entire curriculum.

Curriculum reform has also led to the introduction of earlier exposure to PHC practice opportunities rather than waiting for the clinical cycles, thus incorporating a community vision from the outset.

New Learning Scenarios

Greater emphasis is being placed on incorporating new learning scenarios. These scenarios are reflected in the curriculum in the form of extended rotations in PHC-oriented care and in final practice assignments.

The new scenarios, which deserve credit for their quality, have made it possible not only to explore outpatient care but also to have a real exchange with the community on identifying needs, prioritizing problems, and formulating mitigation plans. The student is seen as a key player who is learning through interaction and reflection on his or her actions.

The new scenarios can only take root if, in addition, proper educational methodologies are introduced to encourage the development of a professional who is independent but at the same time able to interact effectively on a team, open to reflecting on his or her practice, and capable of making a critical assessment of reality. It will be crucial to promote the collective development of these new scenarios based on student-centered methodologies and experiential learning.

In this area, differences were observed in the intervention of educators. While some of the proposals envision a model in which shortcomings are detected under the guidance of teachers, others hold to the importance of having an expert professor oversee elements in the curriculum. These differences correlate with the degree of curriculum integration: the more integrated the curriculum, the less central the teaching role. The differences also reflect the degree of participation of health service professionals in the learning scenarios.

Need to Evaluate Experiences

The presentations also emphasized the need to accompany all these changes and policies with a strict methodology for assessing results. The challenge is to devise indicators for measuring them.

It is easy to analyze the immediate educational results of knowledge gained or demonstration of knowledge applied, but the real test is retention by trained professionals who remain in PHC-related professional careers. Moreover, the ultimate result should be improvement in the health of the population. Measuring this result would increase the validity of the evaluation and the basic proposition, but it would be complex to implement.

The institutions should have self-evaluation instruments on curriculum development and good educational practices that allow them to see how close they are to achieving an educational program for the PHC-based professional profile.

With regard to the evaluation of individual students, the proposals focused on promoting self-evaluation and formative evaluation, along with performance evaluation to assess competencies. Evaluations limited to factual knowledge would be abandoned.

PHC-Oriented Teacher Training

Many of the presentations pointed out the need to think about teaching resources. The reality indicates that university instructors are not prepared to work in community environments and have little background in managing the necessary tools for renewal of PHC. On the other hand, the instructors who are best prepared in these competencies come from public health services and have only limited training in some aspects of individual care.

Moreover, the professionals assigned to PHC tasks who work in the program areas alongside the students often lack the necessary teaching skills to provide an effective learning experience.

Thus, three types of action are needed: (a) training of university educators to provide them with the necessary knowledge and skills in PHC; (b) interdisciplinary input; and (c) development of educational skills for PHC professionals.

All this should be accompanied by a process of selecting and approving scenarios and generating proposals for the training and certification of potential teachers.

Aligning Student Selection with the Needs for Professionals

Several of the speakers, especially those whose schools were concerned about a regional or national shortage of competent PHC professionals, indicated that the main problem is retaining PHC-trained human resources after the students graduate.

In response to this challenge, student selection models have been proposed using appropriate, validated instruments based on traits that are indicative of their development as effective PHC professionals.

It has also been suggested to select students based on their place of origin and use strategies to encourage them to remain where they have been practicing once they graduate. These proposals require flexible curriculum models based on places where the future professionals are likely to be sent. In this case the selection model becomes a recruitment model.

3.3. Working Group Discussions And General Recommendations

Four topics were proposed for the working groups, each focusing on a set of key questions (see below). The groups' respective conclusions have been reported as general recommendations to be taken into account in connection with the various aspects involved in educational planning:

Working Group 1

Central aspects of the new profile and competencies of the PHC-oriented physician

- How should the profile of PHC-oriented professionals be defined?
- Which are the general core competencies of a PHC-oriented physician?

Working Group 2

- Theoretical and practical aspects to be considered in planning the PHC-oriented curriculum.
- Agreements needed between universities/schools and the government/ health services.
- The job market.

Working Group 3

- Fundamental aspects of training for educators to develop a PHC-based curriculum.
- Aspects of selecting students and facilities vis-à-vis ultimate incorporation into the workforce.

Working Group 4

- 1-Needs and challenges faced by universities as they move toward a PHC-oriented educational program.
- 2-Possible opportunities for networking and collaboration.
- 3-Strategies for promoting the PHC-based approach in the Region of the Americas.

Defining the Profile of the PHC-Oriented Physician

In light of the call for renewal of PHC and bearing in mind the structure of health systems in different countries, the working groups defined the following profile for the PHC-oriented physician:

> The graduate should be a general practitioner who is able to provide comprehensive medical care to individual human beings in the context of their family and social environment through actions that involve health promotion, disease prevention, diagnosis, treatment, and rehabilitation while using a bio-psycho-socio-environmental approach, with primary health care as the strategy and the central core of his or her education.

The PHC-educated physician should be a person who is socially sensitive, displays ethical conduct, has capacity for leadership, works well in a team, is self-teaching, and has competencies that enable him or her to influence the well-being of communities and participate in maintaining and recovering the health of individuals, families, and communities while always striving for the highest possible level of quality.

He or she should be capable of performing research, educational (instruction and self-teaching), and administrative activities; establishing interpersonal communication with patients, families, and the population; applying the scientific method; and seeking and assimilating scientific information while at the same time maintaining a critical perspective.

His or her professional performance will be instilled with a high sense of ethics, a commitment to public service, human solidarity, and devotion to preserving the health and quality of life of our community as well as others in need throughout the world (internationalist vocation).

In short, the profile of the PHC physician and the PHC health team should include a holistic and humanistic view of the human being within a socio-environmental context.

In addition to these requirements, the subsequent plenary discussion pointed out the need to examine the conceptual differences between profiles for the PHC-oriented community physician, the family physician, and the medical physician, going beyond the terminologies and concentrating on the competencies needed in order to provide PHC.

Basic General Competencies

In terms of competencies, it was agreed that the graduate should be capable of demonstrating the ability to:

- Adapt his or her professional practice to the definition of the health system in his or her country and according to the context

in which he or she is working on the prevention and solution of health problems.

- Establish relationships of respect and confidence in order to dialogue and negotiate with citizens and teams in the community and other sectors, with respect for cultural diversity.
- Understand the life cycle.
- Work as part of a team and at the same time be able to lead others on the health team and in the community.
- Deal with uncertainty and change.
- Generate his or her own capacity for self-teaching and self-knowledge.

Theoretical and Practical Aspects to be Considered in Planning the PHC-Oriented Curriculum

The list of theoretical and practical aspects presented by the different groups is long, but there was general agreement on the following points:

- Identification of risk factors and vulnerable groups:
  - Family diagnosis and intervention at the family level.
  - Monitoring the health of newborns, children, adolescents, adults, and healthy older adults.
- Epidemiology (sociodemographic indicators):
  - Quantitative epidemiology and qualitative research.
  - Community diagnosis and participatory local planning.
  - Epidemiological surveillance. Reportable diseases. Studies of outbreaks.
  - Tools for evidence-based medicine.
- Knowledge to deal with common pathologies. Special emphasis on the first level of care and common problems at the first level:
  - Addictions.

- Violence.

- Socio-anthropological issues (territorialization; ethnic origins; teamwork):
  - Occupational health.
  - Health education and popular education.
  - Community participation.
  - Networking.
- Political/administrative issues: legislation; management; organization; planning; evaluation; health systems as they relate to the context of PHC practice:
  - Organization of the system.
  - Tools for social management of health resources.
  - Management at the first level of care.
- Communication:
  - The doctor-patient relationship.
  - Teamwork.
  - Community (health promotion and disease prevention strategies).
  - Communication for continuing education (information sciences).
- Ethics and professionalism.

The following **essential practices** for the promotion of learning were cited:

- Diagnosing the health status of the public health area under his or her responsibility: recording and processing statistical, epidemiological, socioeconomic, and health system data; using basic software; setting up a situation room.
- Conducting social and public health research: recording and processing statistical, epidemiological, and socioeconomic data; us-

ing software; applying scientific research methodology, operating the local epidemiological surveillance system.

- Treating cases in primary care areas: diagnostic and therapeutic management of the area's health problems.
- Developing and implementing local health programs at the family or community level: knowledge about the health-disease process, the health system, neighborhood and community organizations, social networks, and awareness of health promotion and disease prevention tools at all levels, including health education and environmental management and social epidemiology.
- Engaging in ongoing self-education in the health service: organizing and participating in presentations of clinical and community cases, preparing progress reports, conducting research projects and programs, and other actions.

In order to organize the curriculum and implement these activities, it was agreed that planners should be able to answer the following questions:

- *Where?*

The answer to this question might be in polyclinics, PHC service networks, social networks (circles of older adults, neighborhood organizations, etc.), or schools.

- *Who will do the teaching?*

The teaching should involve physicians in local health systems who have training in family and community medicine.

- *How should the learning be presented?*

A progressive approach has been proposed that would include monitoring medical management and trying out health interventions before resorting to medical intervention, always under the teacher's supervision.

Agreements Needed between Universities/Schools and the Government/Health Services

The group felt that agreements between the two parties were important as a means of lending sustainability to initiatives aimed at introducing

changes in the education of PHC-oriented physicians. The following actions are important for ensuring that agreements achieve the expected results:

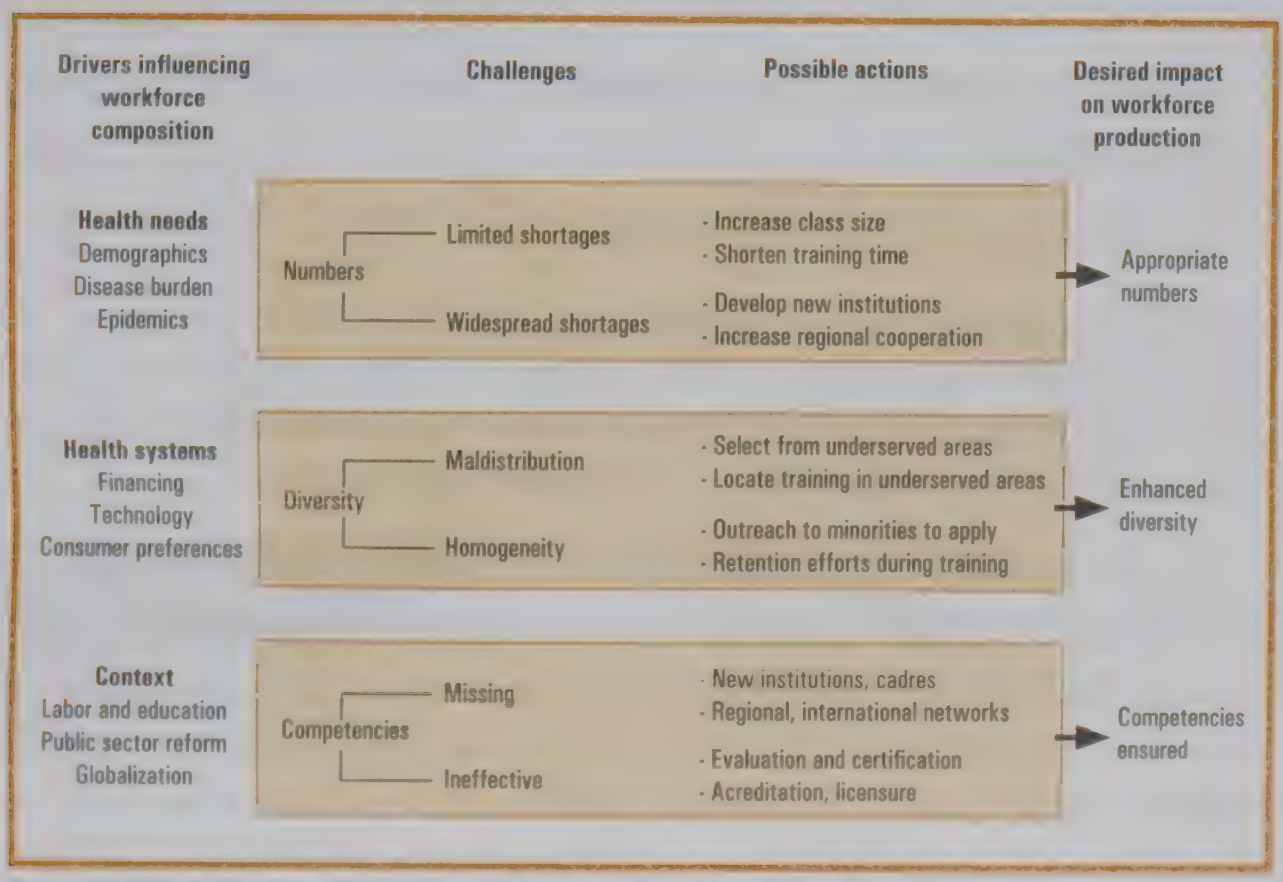
- Promote a dialogue with the health sector leadership to discuss the need for physicians trained in the PHC approach as an effective way of investing resources and increasing health coverage.
- Form a consortia of schools in specific health areas to negotiate detailed agreements with service providers and the government.
- Work to make society aware of the importance of PHC.
- Ensure that existing agreements between the schools and the health services have been updated to guarantee adherence to international commitments.
- Expand agreements beyond formal arrangements with public health services; seek out other structures in the community and enter into commitments with corporations, unions, associations, etc.
- Develop the potential of key players who can exercise leadership in decision-making, both in the schools and in the services.
- Train potential teachers in the health services, instilling in them a new vision of PHC.
- Establish a culture of ongoing evaluation to guarantee educational quality; start by monitoring fulfillment of commitments, satisfaction with what is being achieved, and input to the process itself.
- Capture a media presence by taking advantage of the current trend which views health as one of the highest values (quality of life). It was emphasized that the schools should not in any way assume the obligations of the health service structure.

Job Market for Graduating Physicians

In principle, the supply of human resources for health should be determined by the demand to deliver adequate services that meet the health needs of the population. Given the changes needed in the PHC-based health

systems, as outlined in the World Health Report,[52] in order to strike a reasonable balance between quantity, diversity, and competency in the public health workforce, it is essential to fully understand the driving forces and the challenges that are affecting the health and educational systems as well as the job market. Knowledge of these factors, even if it is not absolute, can help to guide policy-making and the adoption of possible measures related to the educational curriculum and the recruitment of graduates. The following figure, taken from the report cited, shows the mix of elements that affect the makeup of the workforce, the obstacles, the possible actions, and the desired impact on workforce production:

Figure 3. Getting the mix right: challenges to health workforce production



Source: World Health Organization, Working Together for Health. Report, Geneva: WHO, 2006, p. 42.

Fundamental Aspects of Training for Educators in order to Develop a PHC-Based Curriculum

The following key actions were proposed:

- Determine the educators' needs; they are not the same for all institutions.

52 World Health Organization. World health report. Geneva: WHO; 2006.

- Identify the educators required for specific assignments working in PHC.
- Identify people who are committed to PHC renewal.
- Ensure that the PHC renewal strategy is fully understood.
- Assess the needs of the educators to be trained.
- Incorporate strategies for working with the community and enlisting community participation in PHC training for educators.
- Ensure that there is an understanding of student-centered training and the management of abilities and tools that will yield effective returns and a good flow of horizontal communication.
- Create opportunities for discussion within the institution that will permit:
  - Exchanges within the school.
  - Assessment of the teaching task.
  - Consideration of changing roles and increased role of teacher participation in curriculum development.
  - Participation in discussion forums and networks on PHC training for the purpose of exchanging and enriching experiences.

Aspects of Selecting Students and Facilities vis-à-vis Incorporation into the Workforce

It was emphasized that selection of students should not be confused with mechanisms that limit the number of spaces that institutions can establish. Recruiting applicants who are in alignment with a given program profile is not the same as selecting from among candidates who apply for a particular program. The dilemma is whether the process should be passive or whether there should be an effort to actively seek students for the areas in which professionals are needed.

In developing selection methods, focus should be on the students' interest in promoting and developing PHC. If the goal is retention of graduates working in PHC, the selection process should take into account:

- The applicants' expectations and their position on health and human well-being.
- Service-oriented personality characteristics.
- Place of origin.
- Communication skills.
- Ability to work with a group and on a team.
- Communities that need to develop PHC.

To fully consider the community perspective, selection committees should think about including representatives from the community to which the graduate(s) will be assigned.

Policy and Incentives for Guaranteeing Incorporation of Graduates into the Workforce (Retention)

It is important for the government to be involved in these change processes from the start, mainly because of its leadership position in defining health policies and ensuring that they are fulfilled. Governments should be consistent in their intention to implement PHC renewal as they exercise their steering role in both public and private institutions.

An effort should be made to harmonize the characteristics of the population's health needs with the demand for professionals so that the institutions that supply professionals are guaranteed that their graduates are going to find appropriate employment.. This needs analysis should look to the future, taking into account the time to be invested in training the professionals.

It is essential that the process move forward harmoniously so that expected results, needs, progress made, and type of evaluation are all in agreement.

The governments' commitment should include realistic support for these professionals to ensure their integration into the health system and respond to any negative cultural attitudes toward these professionals. Higher salaries are key for retaining these professionals, especially if they are assigned to remote areas.

It will also be essential to guarantee continuing education opportunities for graduates who commit to this professional profile. Programs of this

kind could be incorporated into the medical schools' extension activities and graduate-level curricula.

Needs and Challenges Faced by Universities Moving Toward a PCH-Oriented Educational Program

The challenges that the universities have to face begin with agreeing on an operational definition of PHC and gaining a full understanding of its underlying philosophy. Once this has been accomplished, the schools, working together with the health authorities, should:

- Jointly develop leadership in their respective areas.
- Reach agreement on basic conceptual aspects, such as the number of students needed and the geographic priority areas.
- Develop an integration-action policy in the services that will permit reorganization and regionalization based on the location of the universities.
- Promote research and development proposals that will encourage the procurement of resources that support the change.
- Make agreements with institutions in the community to participate in the educational process and establish intersectoral mechanisms for PHC practice.
- Develop models for the selection of special students for priority situations that require innovative solutions.
- Develop models for the selection and training of educators.
- Plan the program evaluation process and define the expected outcomes.
- Work jointly with government institutions on empowering the university system to spearhead the transformation process leading to the implementation of PHC.
- Work within the schools to facilitate understanding of the new model being developed and the interdisciplinary vision that needs to be cultivated.

- Identify new educational technologies, including virtual resources.
- Secure technical assistance for the implementation, improvement, and reorientation of programs.

Possible Opportunities for Networking and Collaboration

The following actions were proposed as means for developing and strengthening relationships and the support network:

- Develop a database on the schools (decide on the data collection instrument mode of data collection).
- Share and disseminate resources for the development and improvement of change processes.
- Promote research (development of multicenter projects to encourage joint searches for funding).
- Analyze and discuss existing projects and promote dissemination of these experiences.
- Enlist PAHO technical support, liaison capabilities, and coordination with a view to making a coherent impact on political decision-making and supporting the formulation of policies that favor the implementation of PHC on behalf of the population.
- Hold periodic events to share experiences that help to strengthen PHC-oriented schools.
- Undertake a multicenter collaborative project that reflects the points brought out in the seminar—for example, a project on the evaluation process, with a detailed proposal that can be submitted for funding.
- Extend the PAHO initiative to other institutions.

Strategies for Promoting the PHC-Based Approach in the Region of the Americas

Send a summary of this event's discussions (a one-page executive summary) both to the governments (through PAHO) and to other medical schools and representative institutions.

4. Proposal For Work

As a result of the foregoing analysis and discussions among participants at the meeting, the following actions are proposed:

1. Conduct a situation and trend analysis of medical education in the countries of the Region with particular attention to the processes of redirecting education toward primary health care. The study, in addition to generating a baseline for judging the magnitude of an ultimate regional initiative, will make it possible to appreciate the factors that facilitate or hinder this change, whether internal or external to the educational institutions, and identify and characterize innovative experiences.

   - Generate information on the Region's medical schools—public, private, offshore, and other categories—that will produce a general overview of their educational approaches and the dimensions of the different practices. The WHO database on medical schools will be used as a starting point. A collection instrument will be chosen, and a process will be defined for gathering and analyzing the data.

   - Use an analysis method that will make it possible to compare trends in medical education with the orientation of national health policies.

2. Generate the technical capability to promote, guide, and provide advice for institutional processes aimed at redirecting medical education toward PHC based on knowledge and the best available evidence. This technical capability will be developed through the formation of a learning network comprised of academic institutions that are interested in PHC and have had innovative experiences in PHC-oriented undergraduate education, including PAHO/WHO Collaborating Centers and schools of medicine and the health sciences. The network will undertake to:

- Identify and characterize best practices.
- Develop and share concepts, strategies for change, methodologies for intervention and evaluation, instruments, and processes useful for the redirection of medical education toward PHC.
- Disseminate information about the schools' activities and their strategies for the development of PHC-based education.
- Create an opportunity for virtual dialogue through a "practice community" using tools made available by PAHO, especially the Virtual Campus of Public Health.
- Coordinate periodic meetings to share experiences and assess progress under the initiative.
- Generate and provide technical support for evaluative research on experience with the changes.
- Design and implement a virtual train-the-trainers course using the PAHO Virtual Campus of Public Health.
- Seek funding for joint projects and teacher and student exchanges.

3. Undertake a review in both the health and education sectors of public policies, strategies, incentive systems, and technical assistance to help generate an environment for change in the schools of medicine and the health sciences.

4. Develop a regional initiative that will promote joint integrated action by health and higher education authorities, accreditation bodies, and training institutions in the health sciences to redirect medical education toward meeting the health and primary health care needs of the population. The proposal would call on PAHO to provide technical support and assistance with liaison and coordination in order to promote coherent decision-making by political authorities on policies that favor the implementation of PHC on behalf of the population:

   - Hold periodic events to share experiences in strengthening PHC-oriented schools.

- Promote and generate virtual and in-person discussions between the medical schools and the health authorities with a view to reaching agreements on PHC-oriented education.
- Advocate for change with the health authorities and point out the need for support from public entities.
- Share information about the progress being made and the literature available on PHC and medical education.
- Promote joint meetings with academic and health authorities.

Annex I. Questionnaire

PHC-Oriented Medical Schools

General questions

University:	
School:	
Title of academic program:	
Date academic program was established:	
City:	
Country:	
Name of individual responsible for out the survey:	
Telephone:	
E-mail:	

Curriculum

Length of the program (in years):	
Profile of the graduate:	
General description of the curriculum type in terms of:	
A. Organization (cycles, etc.):	
B. Integration (disciplines, modules, units, etc.):	
C. Teaching-learning methods used:	
Indicate, to the extent possible, PHC-related competencies that have been incorporated in the curriculum	

Agreements with the health services and the government

Does your country have a policy for the development of PCH-oriented human resources?	YES ☐	NO ☐
If so, please explain:		
What types of agreements does your school have with the public health services? (Please explain):		
What types of agreements does your school have with private and social security health services (please explain):		

Students

What is the average age of your student body?		
How many students are enrolled in your medical school?		
How many students do you admit annually? (Average of the last 3 years):		
How many students do you graduate each year? (Average of the last 3 years):		
What is your dropout rate over the course of the program? (Ratio of dropouts to students admitted in a graduating class)		
Does your school have a method for selecting students?	YES ☐	NO ☐
Give a summary description of the process and the selection instruments		

Faculty

How many teachers does your medical school have? (As of 30 April 2008):
How many of the teachers are giving courses in:
A. Basic/biological sciences?:
B. Social sciences and epidemiology?
C. Clinical areas (hospital):
D. PHC areas
Does your school have a teacher training department/area/unit/ medical education committee?
Does your school have a continuing education program for teacher training? If so, please explain.

Evaluation methodology

Explain the approach and types of evaluation used in your school:		
What mechanism does your school use to qualify students in the different disciplines/courses/ units/modules? (If there are several mechanisms, please explain each one):		
Does your school do an overall evaluation of students at the end of their academic program?	YES ☐	NO ☐
If so, what is this evaluation like?		

Practical/experiential activities

What proportion of each year of study is devoted to practical activities?:	1. 2. 3. 4.
What proportion of hours per month is devoted to primary care during each year of study?	1. 2. 3. 4.

Educational methodology /activities

List the types of pedagogical activities being used in your school (for example: classes, tutorials, practicums, research, field work, case studies, etc.):	1. 2. 3. 4. 5. 6.
Describe PHC activities in greater detail:	

Facilitating factors

What have been the main advantages or factors that have facilitated the incorporation of PHC-oriented strategies in your school?

Limitations

What have been the main disadvantages or obstacles that have hampered the incorporation of PHC-oriented strategies in your school?

Needs

What are the issues and areas that need to be worked on or strengthened at the present time?

Annex II. Summary Of The Presentations

Meeting on Primary Health Care-Oriented Medical Education Belo Horizonte, MG, Brazil – 21- 24 July 2008

The first day of the meeting was devoted to the presentation of Brazilian experiences in educating professionals and training PHC-oriented community agents with a view to increasing the workforce.

The first presentation, by **Dr. Francisco Campos**, Secretary of Labor Management and Health Education, Brazilian Ministry of Health, offered an overview of Brazilian policies for fostering the development of PHC-oriented curricula and incentives for teaching in different practice scenarios.

The speaker began by describing the government's regulatory framework and the relationship between the principles embodied in the Constitution and the Unified Health System established in 1988. At the heart of the system is the Family Health Strategy, which is evidenced by the presence of 220,000 community health personnel throughout the country who are recruited locally and contracted by the federal system yet maintain their cultural ties with the community. One of the challenges has been the uneven educational level of these agents, which has demanded a high degree of flexibility in the training programs and subsequent supervision. The Minis-

try of Health is currently training 180,000 community health personnel. The training of nursing auxiliaries for the PROFAE initiative is an important focus for the Ministry. This initiative, which has the participation of 319 technical schools and has created a network of 200 nursing schools throughout the country, breaks away from the work-learning dichotomy and is being extended to include other technical areas such as pharmacy, home care, etc.

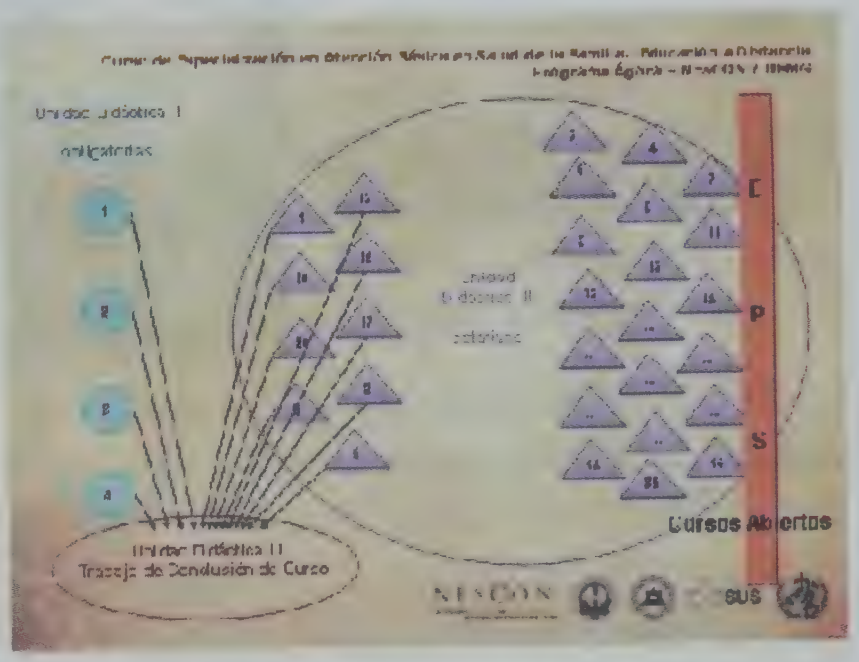
The *Pro Saúde* program, which works to upgrade academic programs in the schools of medicine, nursing, and dentistry, considered 270 innovative curriculum proposals and selected 90 of these, which will affect the training of more than 39,000 students. The new programs promote the use of community scenarios and outpatient health care. They are encouraged to emphasize health promotion more than curative aspects. The Ministry of Health funds residencies in family medicine for graduates of these programs.

The practical scenarios, the theoretical health model, and the educational model are rated according to the lights of a traffic signal: as the program is judged to be making progress or backsliding in the development of PHC-oriented care, the light goes from green to yellow to red.

The following Brazilian experiences were presented in detail:

ÁGORA Experience

Ágora is a program organized by Nescon/UFMG for specialization in basic family health care with a distance learning component. Once of its characteristics is its flexibility: in addition to a nucleus of compulsory courses, it offers a series of electives that professionals can choose from depending on their particular interests.



Its organization clearly respects individual development and allows for each person to develop his or her capabilities. The teaching model is case-based instruction. In addition to hard copy materials, it makes use of resources on

CD ROM, the Internet, or the virtual library: www.nescon.medicina.ufmg.br/agora.

UNASUS- Telesaúde Experience

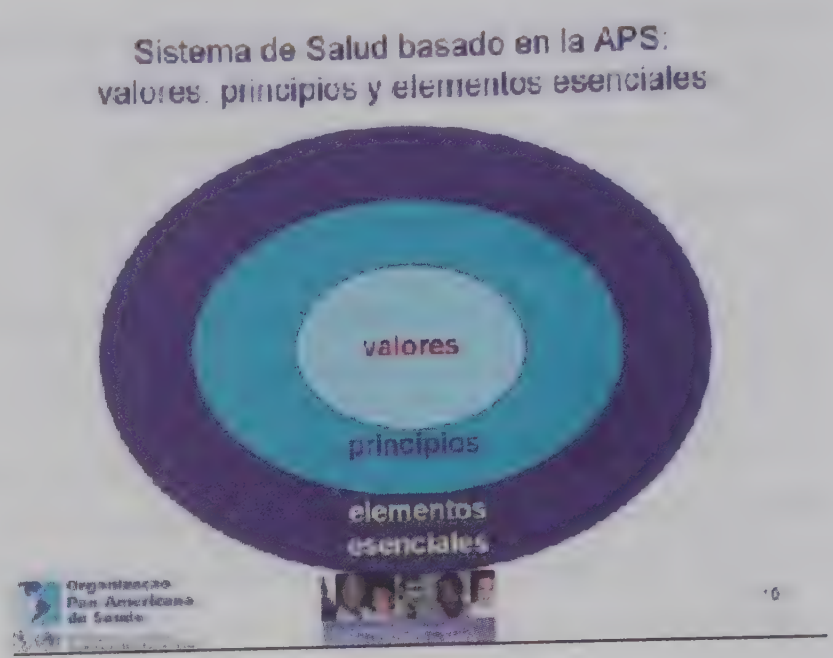
This is a distance-learning course in family health for 52,000 professionals combined with management training for 100,000 health personnel.

A joint effort between the academic institutions and the health services, this open university model is designed to meet the need to train professionals through in-service learning utilizing the tool Telesaúde. It brings together university hospitals, academic centers, and primary care services, especially those located in remote rural areas, in a single bidirectional network. Not only does it promote continuing education for health service personnel, it also enables isolated PHC professionals to obtain a second medical opinion.

The Brazilian experience shows, first and foremost, the need for a commitment both from the government, through the Unified Health Service, and from universities to train future professionals. It also demonstrates the importance of tracking ongoing changes in the health system and the need for new competencies in both health service providers and educators.

Dr. Charles Godue (PAHO, Washington, D.C.) presented a list of Regional goals for human resources development, renewal of primary health care, and PHC-oriented medical education. Building on the principles of health for all and the renewal of primary health care, he presented the Call for Action and the Regional Goals for Human Resources for Health, 2007-2015.

During the course of the meeting a subject of discussion had been Goal 17: "80% of schools of the clinical health sciences will have reoriented their education toward primary health care and community health needs and incorporated strategies for interprofessional education."



Dr. Renato Tasca (PAHO, Brazil) focused on the renewal of primary health care. He made it clear, in essence, that the proposal for renewal calls for the transformation of health systems so that PHC will play a central role. He then went on to explain the conceptual framework of the PAHO document, which attempts to start with values and principles and ultimately get to the essential elements, working from the center outward in concentric circles.

PANEL 1:
Profile and Competencies of the PHC-Oriented Physician

The experience of the **University of Sherbrooke (Canada)** was presented. This institution has a 30-year history of working on curriculum reform. Since 1966 the curriculum has been integrated, organized according to systems, and since the 1980s it has been PHC-oriented. This integrated model is understood to include the following three aspects:

- Theoretical and practical learning
- Basic and clinical sciences
- Public health

The program is competency-based, emphasizing professional performance. With the support of a human resources development program, it has been able to incorporate a significant number of educators from the area of family medicine.

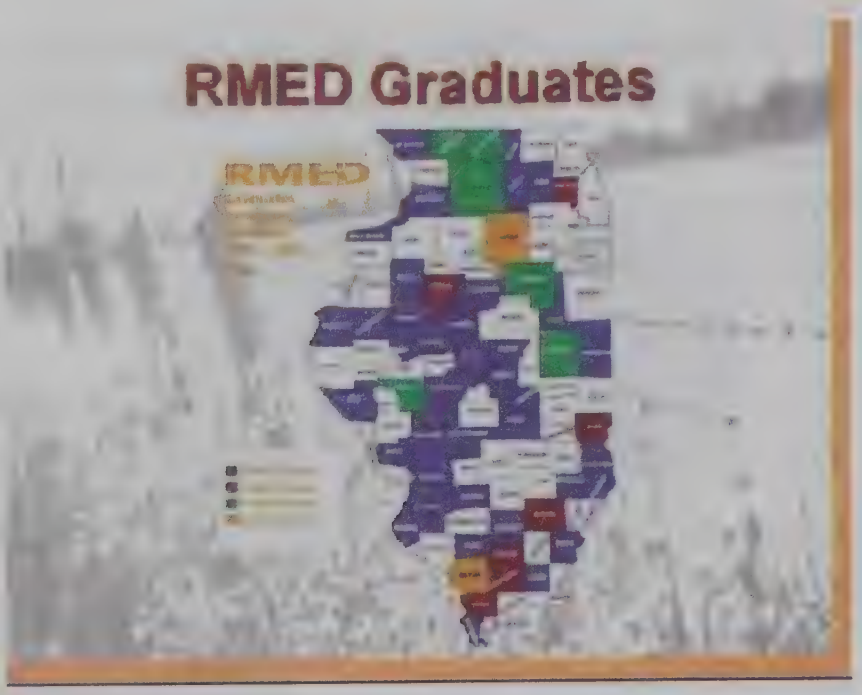
Especially notable is the way the program has developed relationships with affiliates through which it has been able to train students on-site, thus increasing the number and variety of practice opportunities and ensuring greater retention of graduates in these areas. This strategy makes it possible to know more about the needs of the community the student will be serving when he or she graduates.

The presentation by the **University of Tucumán (Argentina)** referred to recent changes in the curriculum, including the addition of longitudinal axes in bioethics, mental health, public health, emergency medicine, and research methodology. The school's long experience with a final practicum in medicine was reviewed. This compulsory final practicum in the medical education program is patterned after a tutorial, in which emphasis is on learning, credit is given for work-study experience, the work is organized around activity nuclei, and performance is evaluated. It appears to capture the fundamental elements for ensuring competencies in future graduates. A correlation between the individual and collective health models seems evident.

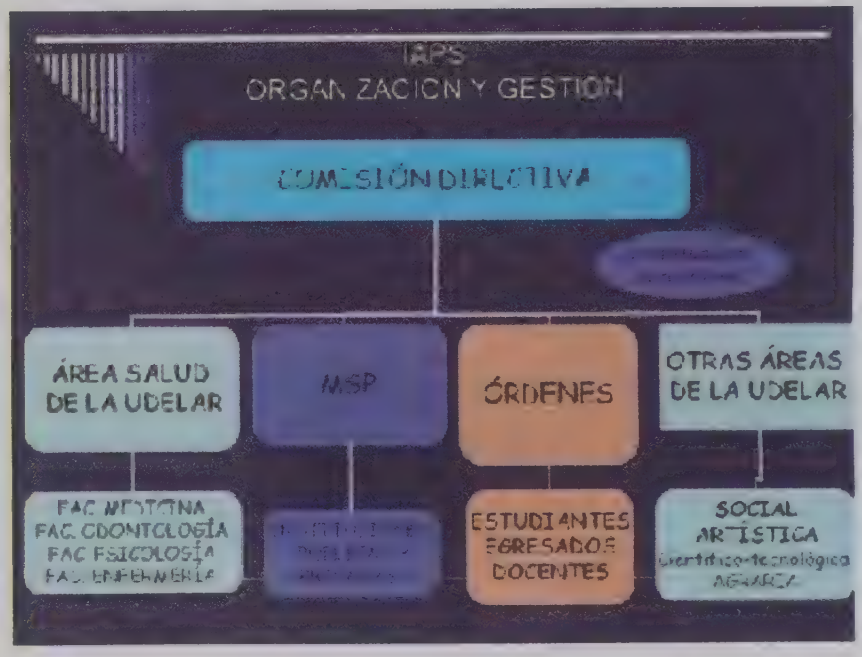
Horizontal integration is already introduced in some of the courses during the first year of the program.

PANEL 2: Relationship between Universities/Schools and Government/ Health Services

The presentation by the **University of Illinois College of Medicine at Rockford (USA)** shifted the meeting's attention to the subject of educating and preparing physicians to practice in rural areas. To start with, the figures were impressive: there are twice as many rural counties in the United States as there are urban ones, which account for only 20% of the population. The demand for professionals is growing. The response of the University of Illinois College of Medicine at Rockford was reviewed. Its programs include the Rural Medical Education Program (RMED), which trains profession-



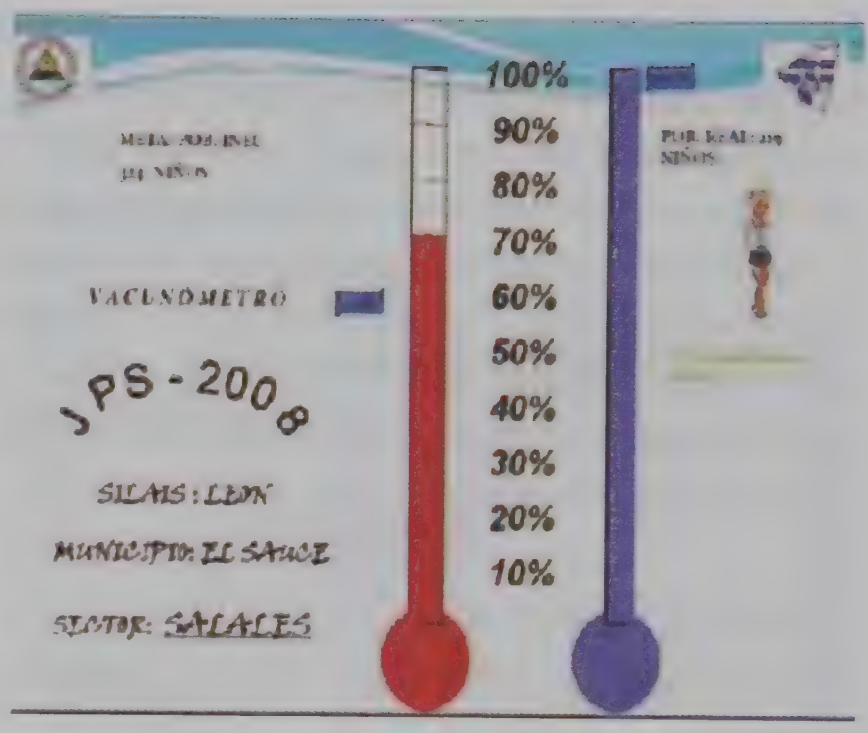
als who will remain in their place of origin. In support of RMED, the project Excellence in Partnerships for Community Outreach, Research on Health Disparities, and Training (EXPORT) establishes effectives partnerships with community services. The students are selected taking into account their place of origin and the medical needs of the area. The RMED curriculum is supplementary, taking four years plus a four-month block of full immersion. It provides unique training opportunities and improved preparation for primary care at the rural level. In addition, the development of a summer internship promotes the interdisciplinary approach.



The presentation by the **National University of the Republic (Uruguay)** cited a new curriculum proposal that was approved by the institution's faculty senate and Council (December 2007 - March 2008) and led to creation of the Department of Family and Community Medicine. Active cooperation has been established with the health services, and professionals are being shared as teaching resources. For this purpose, a consortium known as the Primary Care Institute was created to ensure articulation between all the institutions and stakeholders, with decision-making responsibilities clearly assigned.

The presentation by the **National Autonomous University of Nicaragua at León, (Nicaragua)** focused on the recent curriculum reform that led to rearrangement and resequencing of the modules with a view to establishing improved coordination not only between the modules but also

between skill sets available, and between community and clinical practice and research.



Examples were given in which community practices have been introduced in settings outside the urban health centers of León, where the practice takes several years. Community clinical practice is based on the integration of education, service, and the community, using a comprehensive approach to the health-disease process, with a view to improving community health. The basic pedagogical principle is learning by doing.

By the time students in their sixth year have completed their rotation in community clinical practice, they are expected to have acquired the basic skills to comprehensively handle the Ministry of Health's priority components—for example: health promotion, disease prevention, early diagnosis, treatment, and timely rehabilitation. The impact of the students' actions on the population has been significant and immediate, as reflected, for example, in improved vaccination coverage in some of the populations. This experience clearly shows the importance of strengthening ties between universities and the health services, especially those under the Ministry of Health and the municipalities.

The presentation by the **University of Cuenca (Ecuador)** reviewed its current experience with a model for change at the Ministerial level and the desire to promote changes in education. The intention is to shift from a model centered on disease management to one centered on health promotion. In a country that has

DIFERENCIAS DE MODELOS DE ATENCIÓN

COMPARACION DE:	MODELO DE ATENCIÓN ACTUAL	MODELO DE ATENCION INTEGRAL DE SALUD
Proposito	Atender a la enfermedad	Contribuir a la salud desarrollo humano calidad de vida
Estrategia	Curacion	Promocion, prevencion, curacion y rehabilitacion procesos educativos en ambos niveles
Objeto de atencion	Individuo	Individuo familia y comunidad
Enfoque	Biologico	Biologico psicologico social y cultural
Modelo	Vertical descentralizado	Horizontal sistemico

25 schools of medicine and 13 million inhabitants, it has been a challenge to train instructors in the new learning models and outpatient care, promote self-evaluation and external evaluation of academic programs in the health sciences, seek coordination between the universities and the health system, and promote national, regional, and local agreements regarding human resources education. The speaker also referred to the key role played by the universities in promoting research on primary care starting at the beginning of the academic program and fostering intrainstitutional, interinstitutional, and intersectoral teamwork.

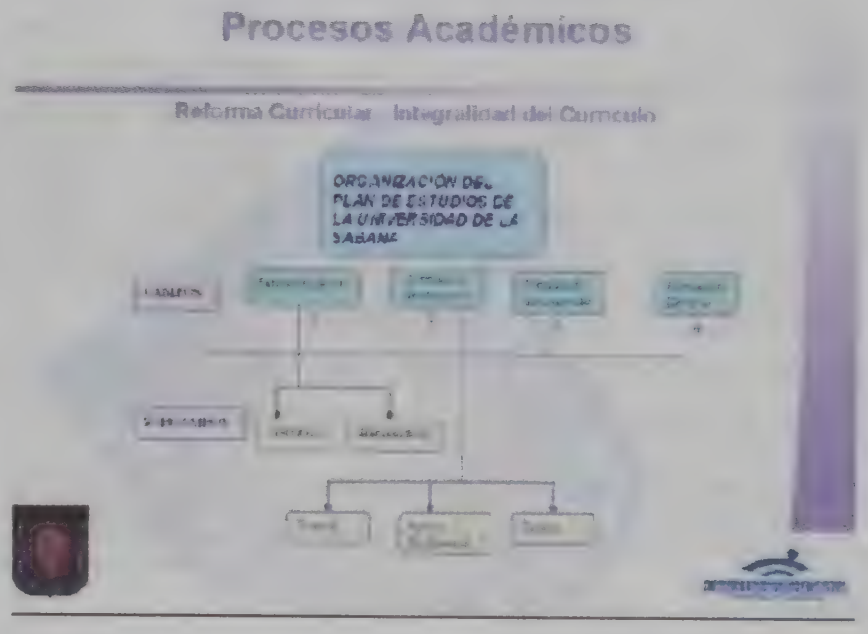
PANEL 3:
Curriculum Development, Aspects Relating to Renewal of PHC, and Practice Opportunities Outside Hospitals

The presentation by the **Havana University of Medical Sciences (Cuba)** highlighted the main characteristics of medical education in Cuba. The presenter explained that comprehensive general medicine (the designation they have chosen to avoid confusion with rural medicine, family medicine, general medicine, etc.) is the integrating discipline. Medical education has recently undergone a fundamental change in which the university classroom has been abandoned and basic education is now being given in a workplace setting. It consists of learning by doing using a one-on-one tutorial approach with mentoring done by the general practitioner at the site where the student is assigned.

This modality is intended to convey the essential nature of knowledge as well as the importance of integration; the "basic sciences" are explored using real cases. In this setting, the student learns teamwork, as well as the relevance of place-based education. This does not mean that university instructors are no longer in the picture; on the contrary, they are responsible for preparing all supporting materials that the students use. There is increasing use of multimedia tools—for example, guided video conferencing, simulations, simulation, etc. At the same time, scientific research is promoted

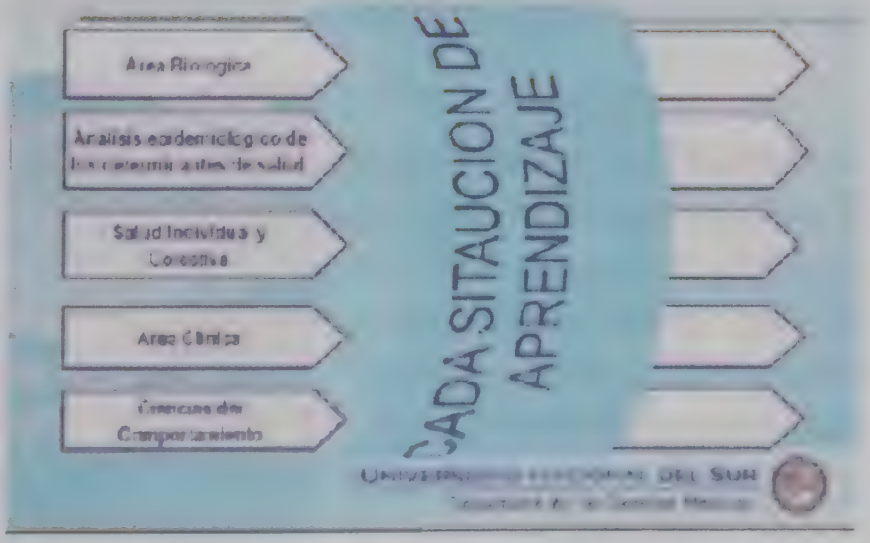
as part of the curriculum. There is an ongoing effort to seek forms of intermediate credentialing to offer incentives for the students. This process has been validated through evaluations that have demonstrated the program's effectiveness without loss of educational quality.

A representative from the **University of La Sabana (Colombia)** reported on medical education in Colombia, pointing out that there are only nine accredited institutions. The fundamental points of the curriculum reform have been: changing the environment for the learning scenario, project-based learning, and use of new technologies. The importance of promoting research on primary health care was stressed, in order to give visibility to the work of professionals involved in PHC-oriented education.



PANEL 4:
Training Educators to Strengthen Their PHC Perspective

The presentation by the **Bahia Blanca National University of the South (Argentina)** focused on the importance of integrating primary care education into a curriculum in which different disciplines jointly contribute for the student's learning experience, as well as the importance of interdisciplinary planning so that this approach can be reflected in the students' conceptual learning.



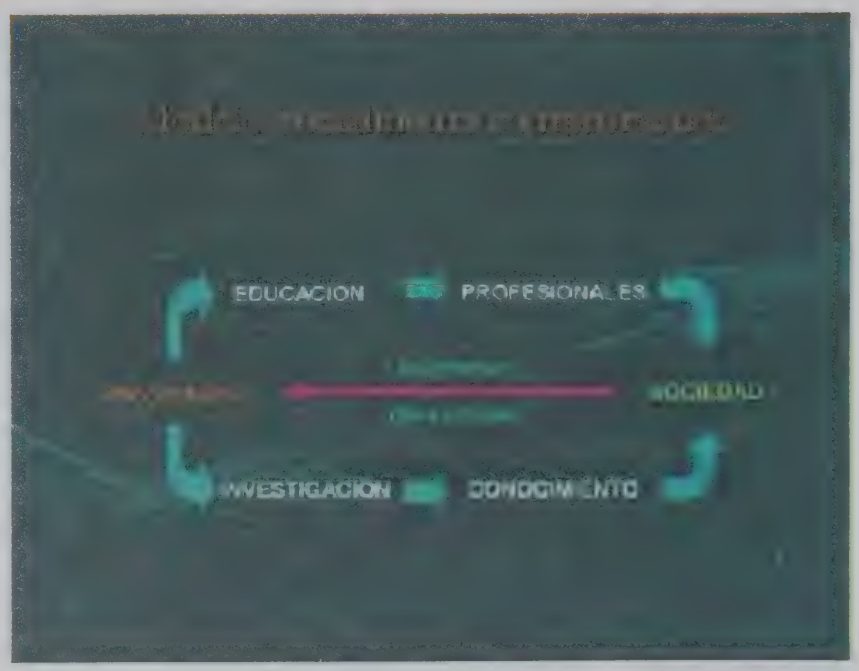
Stress was also placed on the need to train educators in the use of innovative educational models and in the educational style that promotes self-

teaching. On the subject of training educators, it was pointed out that all educators taking part in the program need to understand its educational bases and the methods being used. Furthermore, they should be given the opportunity to receive training in key abilities such as giving effective feedback.

The presentation by the **Madre y Maestra Pontifical Catholic University (Dominican Republic)** reviewed the progress of students in the continuing education program. With regard to the training of teachers, it was proposed that it should be based on the experiences and knowledge of educators, and that building teaching competency through meaningful learning should be encouraged. Accordingly, the curriculum for training the educators should be based on generating questions and promoting the use of writing as a means of encouraging students to think and adopt a cognitive perspective. But even more important than education to develop these capabilities is the need for continuing education and credentialing professionals and programs.

PANEL 5:
Selection of Students, Their Characteristics at Time of Admission, and Their Incorporation into the Work Force

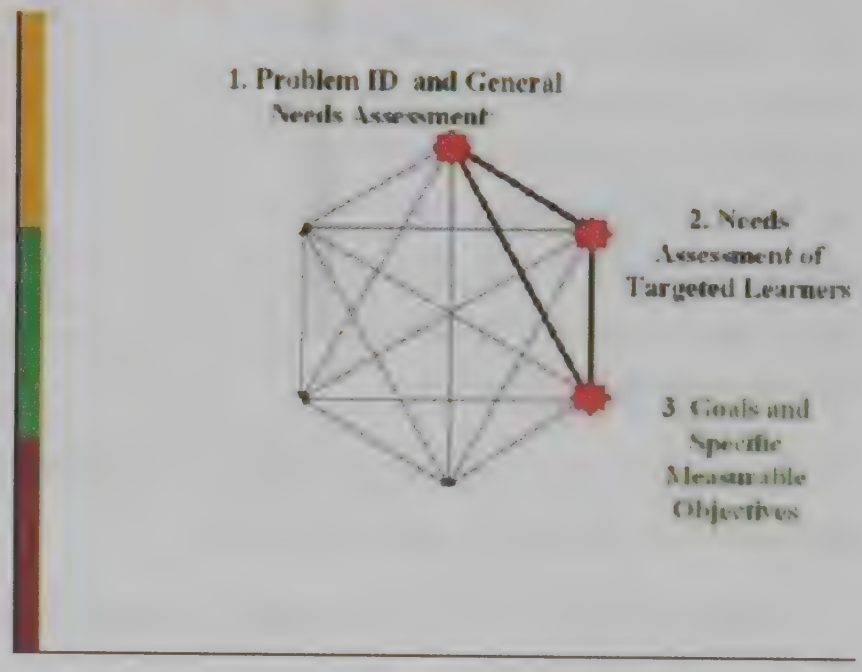
The presentation by the **University of the Cusco (Peru)** emphasized the difficulties associated with not having an adequate selection model and the students' experiences with the nontraditional tasks involved in a more community-oriented approach, especially in connection with the problems of indigenous peoples. Soci-



ety is now demanding educational institutions to produce a graduate profile that is more consistent with existing needs, and universities are having to respond.

Two Additional Presentations of Special Interest

Dr. Ara Tekian (University of Illinois, Chicago, USA) addressed two important areas of concern: curriculum development, and the need for a strength assessment model to assess problems and look for solutions during the curriculum reform process.



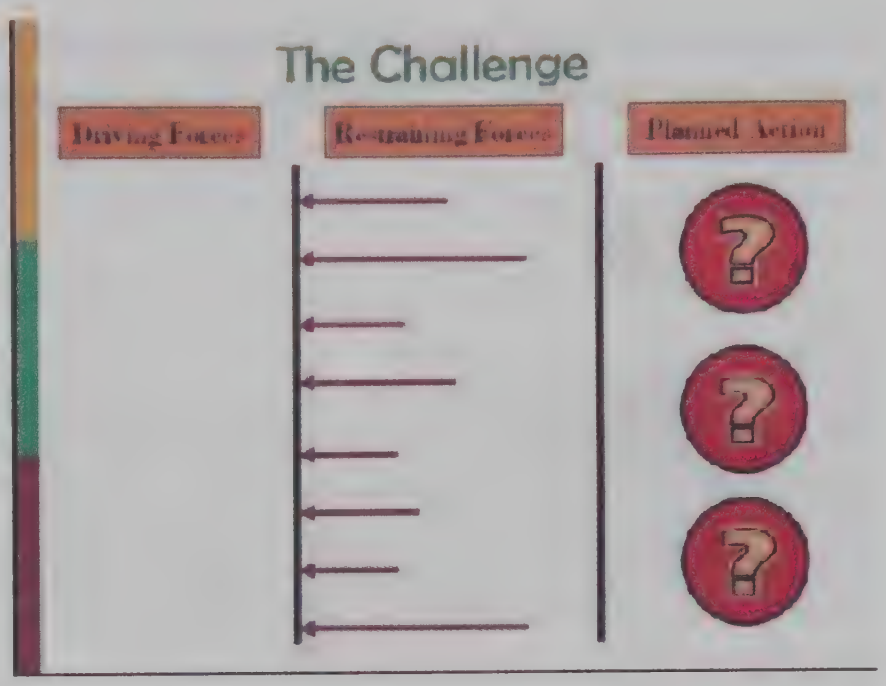
He presented a six-step model for curriculum development that starts with a comprehensive audit of needs in general and goes on to assess the students' training requirements, state objectives in measurable terms, and select the appropriate educational strategies.

Starting with the audit of needs, he pointed out first the need to determine who is affected (patients, professionals, society), what is affected (quality of life, cost, etc.), and the qualitative and quantitative importance of the effects. To do this, it is necessary to review the information that has been published, enlist experts and consultants, and, sometimes, go out and collect new data.

The analysis of students' needs should take into account their previous training, any deficiencies perceived, and the resources that are available. This information can be obtained through informal discussions, interviews, questionnaires, direct observation, etc.

To develop the objectives, it is necessary to relate them to the students' training requirements (the step prior to developing the proposed curriculum), and for this purpose correlation with the needs of society is unavoidable. So it can be seen that in this circular, apparently unidirectional model there are really connecting lines between interrelated steps at all stages.

This can lead to challenges and points of tension. To diagnose the situation it is proposed to use the management technique known as force field analysis developed by Kurt Lewin, a pioneer social scientist. This tool is useful for analyzing the variables involved in the planning and implementation of a program for change.



Underlying the analysis is the assumption that there are both facilitating and limiting forces in any situation.

Once the analysis is complete, actions should be planned for reducing the opposing forces.

Prof. Jadete Barbosa Lampert, from the Committee on Medical School Evaluation of the Brazilian Association of Medical Education, described a proposed project for evaluating changing trends in the curricula of Brazilian medical schools.

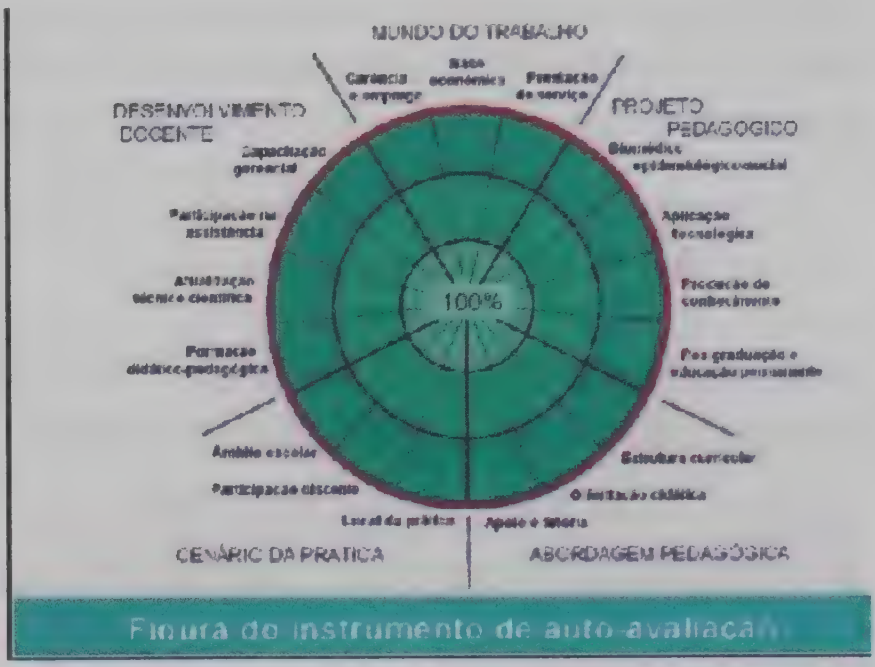


Figura do instrumento de auto-avaliação

The objective of the initiative is to promote and monitor changes in the medical schools as they adapt to curriculum guidelines in accordance with the proposals of the National Health Care System to encourage and support the development of an evaluation process in each school.

For this purpose, a theoretical model of indicators is being developed in which five lines, or dimensions, radiating outward correspond to: the world of work, the pedagogical proposal, teaching performance, scenarios for practice opportunities, and the pedagogical approach. Each dimension

is considered at three levels, depending on the degree of change that has taken place. This model has been validated, and some of the results were presented.

Annex III.
List Of Participants

Latin American Seminar on Medical Education
Belo Horizonte, Brazil, 21–24 July 2008

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CUBA

Jorge González
University of Havana

ECUADOR

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PAHO/WDC

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ISBN 9 789275 129388